

Norfolk Southern Railway Company

East Palestine, OH Derailment Waste Management Plan

**Milepost PC49 Railroad Tracks Northeast of North
Pleasant Drive and Taggart Road Intersect**

Columbiana County

East Palestine, Ohio

EPA ID: OHR000221457

Revision 6

Revised April 18, 2023

Contents

Acronyms and Abbreviations.....	iv
1 Introduction.....	1
1.1 Purpose.....	1
1.2 Site History.....	2
1.3 Waste Management Activities Prior to UAO.....	4
1.3.1 Immediate Response Exemption.....	4
1.3.2 Waste Generation and Storage.....	4
1.3.3 Sampling and Analyses.....	5
1.3.4 Waste Determinations and Disposal.....	6
2 Regulatory.....	7
2.1 Hazardous Waste Regulations.....	8
2.1.1 Determination of When Contamination is caused by a Listed Hazardous Waste.....	8
2.1.2 Determination of Whether a Waste Exhibits a Characteristic of Hazardous Waste.....	8
2.1.3 LDR for Waste Carrying a Listed and/or a Characteristic Code.....	8
2.1.4 Regulations applicable to waste impacted with PFAS/PFOA and Dioxins/Furans.....	9
2.2 Non-Hazardous Waste Regulations.....	9
3 Onsite Management of Waste.....	10
3.1 Segregation of Potential Waste Streams.....	10
3.2 Onsite Management Methods for RCRA Hazardous Waste and Contaminated Media.....	11
3.2.1 AOC Policy.....	12
3.2.2 Corrective Action Temporary Units.....	12
3.2.3 Management of Waste in AOC and TUs.....	15
3.2.4 Labeling.....	16
3.3 Onsite Management of Non-RCRA Waste.....	16
4 Sampling and Analyses.....	16
5 Waste Determinations.....	18
5.1 Generator Knowledge.....	19
5.2 Are the Wastes Listed?.....	19
5.3 Are the Wastes Characteristic?.....	19
6 Disposal Options.....	20
7 Emergency Response.....	21

7.1 Notification Procedures 21

7.2 Spill Response 22

8 Offsite Transportation and Disposal 22

8.1 UAO and CERCLA OSR Requirements 22

8.2 Air Monitoring 23

8.3 RCRA and USDOT Requirements for Off-Site Shipments of Hazardous Waste 23

8.3.1 Transportation Management 24

8.3.2 Transloading Waste from Truck to Rail..... 25

8.3.2.1 Liquid Transfer at NSRC Yard, Lordstown, OH 25

8.3.2.2 Solid Waste Transfers at NSRC Yard, Maple Heights, OH 27

8.3.3 Truck Routes 28

8.4 Manifested Load Tracking 28

9 Training..... 29

10 Recordkeeping 29

11 References 30

Tables

- Table 1 Regulations Applicable to Waste Types and Storage Location
- Table 2 Regulatory Requirements for Temporary Units

Figures

- Figure 1 Site Map

Attachments

- Attachment 1 Safety Data Sheets
- Attachment 2 Examples of Completed Labels
- Attachment 3 OEPA Approved Sampling and Analyses Plans
- Attachment 4 Waste Generation Log and Applicable Regulations
- Attachment 5 Waste Transportation and Disposal Log
- Attachment 6 Carrol/Columbiana/Harrison Solid Waste Management District, 2018-2032 Solid Waste Management Plan, Appendix P - Designation

East Palestine, OH Derailment
Waste Management Plan
Revision 6

Attachment 7 Secondary Containment Standard Operating Procedures

Attachment 8 Temporary Unit Inspection Form

Appendix

Appendix A East Palestine Incident Action Plan, OP6

Appendix B Waste Profiles and Approvals

Appendix C Transportation Management Plan

Acronyms and Abbreviations

AFFF	aqueous film forming foam
AOC	area of contamination
ARAR	applicable and relevant and appropriate requirement
Arcadis	Arcadis U.S., Inc.
CCH	Carroll/Columbiana/Harrison
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	constituent of concern
CY	cubic yards
HDPE	high-density polyethylene
LDR	Land Disposal Restriction
LQG	large quantity generator of hazardous waste
NCP	National Oil and Hazardous Substances Contingency Plan
NS	Norfolk Southern
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSR	Off-Site Rule
PCBs	polychlorinated biphenyls
PFAS/PFOA	per- and polyfluoroalkyl substances
Plan	Waste Management Plan
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
SDS	Safety Data Sheets
SVOC	semivolatile organic compound
TCLP	toxicity characteristic leaching procedure (
TSCA	Toxic Substances Control Act
TU	temporary unit

East Palestine, OH Derailment
Waste Management Plan
Revision 6

UAO	Unilateral Administrative Order for Removal Actions
UHC	underlying hazardous constituent
UP	Union Pacific
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
UTS	universal treatment standards
VC	vinyl chloride
VOC	volatile organic compound

1 Introduction

1.1 Purpose

This Waste Management Plan (Plan) has been prepared by Arcadis U.S., Inc. (Arcadis) to define measures necessary to safely manage and characterize waste generated from the February 3, 2023, Norfolk Southern (NS) East Palestine, Ohio derailment. Waste characterization will be conducted in accordance with applicable Federal, State, and County waste regulations. This Plan provides procedures for onsite management, characterization, and offsite disposal of waste associated with the derailment. Waste profiles will be reviewed and approved by NS and disposal facilities prior to transportation and disposal of waste. Characterization of the waste streams generated by the derailment will be based on field screening data, laboratory analysis, Safety Data Sheets (SDS) of the product(s) released, generator knowledge, site inspections, and interviews with local responders. This is a working document that will be updated as needed as emergency response and remediation activities progress.

In the event of an emergency involving hazardous wastes that could result in an immediate or potential threat to human health or the environment personnel identifying the emergency should

- **Contact 911**
- **Secure the area and if possible, attempt to stop or contain the release**
- **Immediately notify NS Emergency Contacts**

EMERGENCY COORDINATORS

Title	Name	Emergency Number
Primary Emergency Coordinator(s)	Bryan Naranjo - NS Unified Command Group Robert Wood - NS Operations	Exemption 6 - PII
Secondary Coordinator(s)	Daniel Hunt - NS Remediation Manager Robert Scoble - NS Environmental Operations Chad Edwards – NS Liquid Waste Operations David Patten – NS Solid Waste Operations	404-273-4472 Exemption 6 - PII

LOCAL EMERGENCY RESPONSE AGENCIES

FIRE	East Palestine Fire Dept. Keith Burch, Fire Chief	911
POLICE	East Palestine Police Dept	911
HOSPITAL	Mercy Health St. Elizabeth 8401 Market St. Youngstown, OH 44514	911

Emergency Contact information will be posted in areas where hazardous waste is generated or accumulated.

Contact information for all subcontractors and Federal and State contacts along with associated roles and responsibilities are summarized in the East Palestine Incident Action Plan, OP6 (Appendix A). The following list is an abbreviated version of key contacts for onsite waste management tasks.

Contact	Email	Phone	Role
Michelle Clayton, Arcadis	Michelle.clayton@arcadis.com	Exemption 6 - PII	Waste segregation, onsite storage & labelling, sampling, profiling, manifesting and tracking
Josh Lindley, SPSI	Lindley@callspsi.com	Exemption 6 - PII	Coordination and billing for transportation of Liquid wastes, equipment operator for solid waste loading
Chad Runnion, Green Rock	Crunnion@greenrockllc.com	Exemption 6 - PII	Coordination and billing for transportation of solid wastes
JT Wilson, CTEH Vandra, CTEH		Exemption 6 - PII	Air monitoring Tank Farm area Air monitoring solid waste area
Justin Hahn, HEPACO	jhahn@hepaco.com	Exemption 6 - PII	Traffic coordination for Tank Farm loading/offloading, moving drums to drum staging area, covering solid waste staging piles, dust control
Jimmy, US Ecology (SPSI subcontractor)		Exemption 6 - PII	Loading for offsite liquids
Rob Cronin, Cronin		Exemption 6 - PII	Loading for offsite
Nesto, Clean Harbors		Exemption 6 - PII	Pump out secondary containment
Frank Zingales, OEPA	Frank.Zingales@epa.ohio.gov	330-963-1108	Regulatory oversight for OEPA Division of Environmental Response and Revitalization
Adam Vrabec, USEPA R5		312-448-3853	Regulatory oversight for wastewater transfer and loadout
Jackie Cole, USEPA R5		312-597-4421	Regulatory oversight for solid waste loadout
USCG		443-718-1327	Regulatory oversight of liquid loading

Any deviations from this Plan must be approved by NS and the United States Environmental Protection Agency (USEPA). For questions on waste management requirements, contact the Arcadis project manager (Jason Artrip) or the Arcadis waste coordinator (Michelle Clayton).

1.2 Site History

On February 3, 2023, a NS train derailment and subsequent fire occurred in East Palestine, Ohio. The derailment involved 51 rail cars and resulted in a fire and breaches to tank cars that contained hazardous materials and non-

hazardous materials. The releases affected stormwater infrastructure and surface water, including Sulfur Run and Leslie Run. The exact volumes released are not yet available.

On February 21, 2023 Norfolk Southern and the USEPA entered into a Unilateral Administrative Order for Removal Actions (UAO) (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] Docket No. V-W-23-C-004; USEPA 2023). A List of the Contents of the Rail Cars Which Derailed is provided in Appendix A of the USEPA Unilateral Administrative Order for Removal Actions. Site specific constituents of concern (COCs) are also identified in the Main Line 1 Track Excavation Plan. Based on visual inspections and generator knowledge of the railcar inventory, the following liquid commodities were released as a result of the derailment and have been used to identify COCs targeted for waste disposal. SDS for the chemicals released are included as Attachment 1:

- Vinyl Chloride, stabilized (VC)
- Propylene glycol*
- Polypropyl glycol*
- Diethylene glycol*
- Dipropylene glycol*
- 2-Ethyl hexyl acrylate*
- Butyl acrylates, stabilized*
- 2-butoxyethanol (ethylene glycol mono butyl ether) *
- Petroleum lube oil*
- Beer Cars (ethyl alcohol) *
- Polyvinyl (plastic beads) *
- Semolina Flour*

*These COCs are not identified listed chemical sources and do not have universal treatment standards (UTS). COCs exhibiting a hazardous waste characteristic are exclusive to ignitability (D001). Analysis of these COCs is limited to ignitability for recovered liquids. Analysis of these COCs is not required by the disposal facilities for solid wastes and will not be used for decision making for waste determinations of the solid waste.

During response activities, approximately 40 gallons of T-storm aqueous film forming foam (AFFF) concentrate was utilized by the local fire department to control the fire prior to NS arrival at the scene. The local fire department was not able to confirm the location where the AFFF was utilized. A SDS for the AFFF is included in Attachment 1. The composition of the AFFF is listed in Section 3 of the SDS. Based on the SDS and knowledge of the product, this brand of AFFF contains per- and polyfluoroalkyl substances known as PFAS and PFOA.

On February 6, 2023, five VC car(s) were deemed unstable and at risk of explosion as a result of the fire and intense heat. It was determined that a controlled vent and burn was necessary to protect human health and establish a safe working environment for the remedial activities. The use of a controlled vent and burn minimized the potential for bulk releases to the surface, however minor surface releases of VC may have occurred during the controlled vent and burn. The location where the controlled vent and burn occurred is documented in Figure 1. The generation of dioxins was identified as a potential COC resulting from the initial and secondary vent and burn that resulted from the derailment.

1.3 Waste Management Activities Prior to UAO

Prior to the effective date of the UAO, all waste management were performed under the direction of Ohio Environmental Protection Agency (OEPA) and the USEPA. General waste management activities such as containerization and storage requirements were described in the Draft Site Waste Management Plan (February 12, 2023). Remedial activities generating waste included excavation of soil from between the tracks and continuous collection of impacted surface water. Sampling and analyses requirements for waste characterization were discussed with OEPA and subsequently presented as a memo for approval (see Attachment 3). All waste sampling and analyses plans were presented to OEPA and approved prior to execution.

1.3.1 Immediate Response Exemption

Resource Conservation and Recovery Act (RCRA) regulations in 40 Code of Federal Regulations (CFR) Parts 264 and 265 Subparts C and D require immediate actions to minimize hazards to human health and the environment from any unplanned, sudden or non-sudden releases of hazardous waste or hazardous constituents. Action taken under emergency response situations are covered under the USEPA immediate response exemption [RO12748]. The immediate response exemption excuses facilities from permitting (270.1(c)(3)) and RCRA substantive management standards (264.1(g)(8) and 265.1 (c)(11)). The exemption also excludes transportation of wastes during emergency response actions, generators, and transporters are excluded from obtaining USEPA IDs and manifests. RCRA requirements not covered by the immediate response exemption include Subpart M - Preparedness and Prevention and Contingency Plan and Emergency Procedures. Waste management actions conducted prior to the UAO were performed under an immediate response exemption, this exemption ended on February 21, 2023, NS and USEPA entered into the UAO (CERCLA Docket No. V-W-23-C-004; USEPA 2023).

1.3.2 Waste Generation and Storage

Prior to the effective date of the UAO, the following waste streams were generated and staged onsite as described below.

- **Soil impacted with VC and butyl acrylate placed in roll-off containers and in staging piles.** The staging piles were located within the area of contamination (AOC). Piles were placed on welded high-density polyethylene (HDPE) secondary containment pads and covered in poly sheeting when not in use. The boxes were not on secondary containment, but routine visual inspections were performed. Any observed issues were immediately addressed.
- **Recovered liquids to include surface water, fire water, and decontamination water impacted with VC and recovered product (acrylates, glycols, lube oil).** All liquids were collected via vacuum trucks and consolidated into temporary storage tanks for storage pending offsite disposal. Temporary storage tanks were placed in individual secondary containment pads. Four primary tank staging areas were constructed based on proximity to locations where large volumes of surface water were being collected. Figure 1 shows the locations of the now former tank staging areas.
- **Impacted debris (Absorbent booms & pads, personal protective equipment [PPE]) was staged in roll-off boxes.** The boxes were not on secondary containment, but routine visual inspections were performed.
- **Street sweepings.** Material was placed in roll-off and staged in the asphalt parking lot of Leake Oil.

- **Non-hazardous waste (unimpacted commodities).** Material was placed in roll-off and or directly loaded into dump trucks and vacuum trucks for transport to the approved disposal or recycling facility as described later in this section.
- **Municipal trash.** Material was placed into roll-off containers and transported offsite for disposal.

1.3.3 Sampling and Analyses

A summary of the waste sampling and analyses performed under OEPA direction is provided below.

Sampling of Solid Waste

- Staging Pile 1A, generated from an 0 to 18 inch excavation between the tracks in the VC release area:
 - Collected 10 grab samples, submitted for analyses of total volatile organic compounds (VOCs), total semivolatile organic compounds (SVOCs), toxicity characteristic leaching procedure (TCLP) metals.
 - Lab generated two composite samples from the 10 grab samples; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. One of the composite samples was subsequently selected for dioxin/furan analyses.
- Staging Pile 1B, generated from an 18 to 48 inch excavation between the tracks in the Vinyl chloride release area:
 - Collected 10 grab samples, submitted for analyses of total VOC, total SVOC, TCLP metals.
 - Lab generated 2 composite samples from the 10 grab samples; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. One of the composite samples was subsequently selected for dioxin/furan analyses.
- Staging Pile 2, generated from an 0 to 48 inch excavation between the tracks in the butyl acrylate release area:
 - Collected 14 grab samples, submitted for analyses of total VOC, total SVOC, TCLP metals.
 - Lab generated 2 composite samples from the 14 grab samples; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. One of the composite samples was subsequently selected for dioxin/furan analyses.
- Staging Pile North, generated from excavation of the north ditch within the Vinyl chloride release area
 - Collected 10 grab samples, submitted for analyses of total VOC, total SVOC, TCLP metals
 - Lab generated two composite samples from the 10 grab samples; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. One of the composite samples was subsequently selected for dioxin/furan analyses.
- Roll-off boxes generated from surface scrap of North Ditch in areas west of the vinyl chloride release area:
 - Collected 10 grab samples, submitted for analyses of total VOC, total SVOC, TCLP metals.
 - Lab generated 2 composite samples from the 10 grab samples; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. One of the composite samples was subsequently selected for dioxin/furan analyses.
- Roll-off and Vacuum boxes containing plastic pellets and soil:
 - Collected five grab samples from containers with plastic pellets only and collected five grab samples from containers with plastic pellets and soil, submitted for analyses of total VOC, total SVOC, TCLP metals.

- Lab generated one composite for plastic pellet each waste stream; composite samples were analyzed for TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides, PFAS/PFOA and Total PCBs. Dioxin impacts are not considered a potential COC for this waste stream, no dioxin analyses were performed.
- Roll-off box of Street sweepings:
 - Collected one grab sample which was submitted for analyses of total VOC, total SVOC, TCLP metals, TCLP VOC, TCLP SVOC, TCLP Pesticides, TCLP Herbicides and Total PCBs.

Sampling of Liquid Waste

- Collected samples from five of the original 10 temporary storage tanks generated following the derailment. Samples were collected with a bailer and submitted for analyses of VOC, SVOC, metals, pH, flashpoint, total suspended solids and total organic carbon. One composite sample was generated by the lab and submitted for PFAS/PFOS analyses.

1.3.4 Waste Determinations and Disposal

Waste determinations were made based on generator knowledge of a U-listed source, commercial grade unused vinyl chloride, and analytical results. The following is a summary of the waste determination completed prior to the UAO.

- Surface water, fire water, decontamination water and recovered product are characterized as listed hazardous waste, U043. Based on analyses the liquid waste does not exhibit any characteristics of hazardous waste other than toxicity for vinyl chloride and is not Toxic Substances Control Act (TSCA) regulated. The VC characteristic is covered under the U listing.
- Contaminated soils in staging piles and soil and wastes in roll-of boxes (mentioned in Section 1.3.2) are characterized as U043 (VC) listed hazardous waste based on generator knowledge that these wastes were generated from the cleanup of a release of a U-listed chemical. Contaminated soil and roll-offs were sampled prior to the UAO effective date; however, the analyses were not received until after the UAO effective date. Waste determinations for the soils and soil and waste in roll-off boxes which were performed after the UAO identified that these wastes do not exhibit any characteristics other than toxicity for vinyl chloride of hazardous waste. The VC characteristic is covered under the U listing.

Waste disposal facilities for liquid wastes and disposal methods are summarized below. Copies of the waste profiles and approvals are provided in Appendix B.

Liquid Waste, Hazardous					
State	Disposal Facility	Address	CERCLA Approved	Profile Status	ID Number
OH	Vickery (Deep Well Injection)	3956 State Route 412, Vickery OH 43464	Y	Approved	OHD020273819
TX	Texas Molecular Deer Park (Deep Well Injection)	2525 Independence Rd Deer Park, TX 77536	Y	Approved	TXD000719518
MI	Romulus (Deep Well Injection)	28470 Citrin Drive Romulus, MI 48174	N	Approved	MIR000016055

Transportation and disposal of the wastewater began on February 14, 2023. Prior to execution of the UAO a total of 172 loads (approximately 817,228 gallons) of U043, Hazardous wastewater was shipped offsite for disposal.

The following is a list of commodities being transported by the train that derailed (see Appendix B, USEPA Unilateral Administrative Order for Removal Actions, CERCLA Docket No. V-W-23-C-004; USEPA 2023). Railcars containing these commodities were not breached and there was no release to the environment associated with these products. Based on generator knowledge, the commodities listed below were fully contained within railcars and were not contaminated by the VC release. Commodities in rail cars that were not breached were identified as non-RCRA hazardous waste and managed under applicable OEPA solid waste regulations. The following is a list of commodities that have been offloaded and managed for recycling, disposal of purchased as off-spec commercial products.

Commodity	Disposal Method	Disposal /Recycling Location
Polypropylene (Polyol)	Solidification/ landfill	Republic Services Carbon Limestone Landfill 8100 S State Line Rd, Lowellville, OH 44436
Dipropylene glycol	Solidification/ landfill	
Propylene glycol	Solidification/ landfill	
Paraffin Wax (Carbon wax)	Solidification/ landfill	
Lube oil additive (non-recyclable)	Solidification/ landfill	
Lubad (Lube oil additive)		
food commodities (veggies)	landfill	
powder flakes (hysorb)	landfill	
Malt Liquor Containers (bottles of beer)	Empty containers only - landfill	
Petro Oil (Lube Oil)	Oil recycling	Everclear Oil Ltd. 3700 Oakwood Ave, Austintown, OH 44515 PetroMax Ltd 301 Prestley St, Carnegie, PA 15106
Fuel Additives (Lube Oil Additive)	Oil recycling	Petromax
Passenger vehicles	Recycled as scrap metal	D&D Salvage 6375 Railroad Street Pittsburgh, PA 15201
Diethylene glycol	recyclable material purchased as is	American Chemical Products 5041 W 161st St, Cleveland, OH 44142

2 Regulatory

On February 21, 2023, NS and the USEPA entered into the UAO (CERCLA Docket No. V-W-23-C-004; USEPA 2023). The response action is now being performed under a UAO issued under authority of CERCLA. As such, the response action must ensure that all waste characterization and management comply with applicable and relevant and appropriate requirements (ARARs) of federal, Ohio, and local environmental laws, including RCRA Subtitle C (hazardous waste identification and management), as set forth in Section 121 of CERCLA and 40 CFR 300.415(j) of the National Oil and Hazardous Substances Contingency Plan (NCP). While NS meets the definition of a “generator” under RCRA regulations (see 40 CFR 260.10) and is responsible for determining whether any waste meets the definition of a RCRA hazardous waste, the lead agency (USEPA) and support agency (OEPA) will review all waste characterizations and management of wastes to identify ARARs and ensure compliance with ARARs, as necessary. All hazardous waste determinations will be made at the point of generation concurrent with

determining whether hazardous waste is prohibited from land disposal (i.e., compliance with the Land Disposal Restriction [LDR] treatment standards in 40 CFR Part 268). In addition, offsite disposal of any waste (hazardous or non-hazardous) generated by the response is subject to all applicable requirements, including permits, as well as the procedures for planning and implementing off-site response actions at 40 CFR 300.440 of the NCP (i.e., CERCLA Off-Site Rule). This section presents the regulations governing onsite management and disposition of waste under the UAO and the Ohio Administrative Code (OAC).

2.1 Hazardous Waste Regulations

Current waste sampling and analyses procedures are consistent with the procedures implemented under OEPA. Additional details are provided in Section 4. RCRA identifies requirements for characterization of wastes and for management of hazardous waste, requirements applicable to the site are specified below.

2.1.1 Determination of When Contamination is caused by a Listed Hazardous Waste

The regulations in 40 CFR §261.33 provide a definition of hazardous wastes that are discarded commercial chemical products, off-specification species, container residues, and spill residues thereof. The commercial chemical products, or off-specification commercial chemical products listed in 40 CFR 261.33(f) are known as U-listed wastes. Per 40 CFR 261.33(d) contaminated soil or water (media) generated from the cleanup of releases of U-listed chemicals is hazardous waste and the spill residues must carry the same listed waste codes as the chemical that was spilled.

Spill residuals from the release of a U-listed chemical must be managed as a U-listed hazardous waste unless the constituents from a U-listed chemical are present in the media at concentrations less than health-based levels, in which case the contaminated media will no longer be regulated as a RCRA U-listed hazardous waste (referred to as a "Contained-In Decision for Media and Debris). This process is known as the "contained-in determination" and requires written approval by USEPA. Contained-in requests will be prepared and submitted separately to the OEPA and USEPA. Copies of contained in requests and approvals will be maintained in the project records for a minimum of 10 years.

2.1.2 Determination of Whether a Waste Exhibits a Characteristic of Hazardous Waste

If the waste is not listed, it must be determined if it exhibits any of the four characteristics of a hazardous waste. This evaluation can be based on laboratory analyses or generator knowledge. A waste is a characteristic waste if it exhibits the properties of ignitability, corrosivity, reactivity, or toxicity as defined in 40 CFR 261, Subpart C.

2.1.3 LDR for Waste Carrying a Listed and/or a Characteristic Code

All RCRA hazardous wastes, including hazardous contaminated media, generated during the removal response must comply with applicable RCRA LDRs regulations found in 40 CFR Part 268 prior to disposing of those wastes at an approved off-land disposal facility. NS will follow the regulations at 40 CFR 268.9 for identifying all the RCRA waste codes applicable to a hazardous waste for purposes of determining the applicable LDR treatment standards found in 40 CFR Part 268 subpart D. For those wastes where the LDR treatment standard includes

treatment of underlying hazardous constituents (UHCs), NS will identify all reasonably present UHCs in those RCRA hazardous wastes and hazardous contaminated soils to determine if the concentration of those UHCs are above their respective UTS and require treatment.

If the generator determines that a listed code is applicable, then it is always applicable to the waste. If the waste is not listed, then the generator must determine if the waste exhibits any characteristics. However, for the purpose of compliance with LDR, the generator must determine if the listed waste also exhibits a characteristic. Where a waste is both listed and exhibits a characteristic, the treatment standard for the listed waste code (40 CFR part 261, subpart D) will operate in lieu of the standard for the characteristic waste code (40 CFR part 261, subpart C), provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic. Otherwise, the waste must meet the treatment standards for all applicable listed and characteristic waste codes. Note that assigning a characteristic code to a listed waste often requires a generator to determine if the waste contains UHCs. If UHCs are present, they must be identified on the LDR paperwork, and the receiving facility must ensure that all UHCs are treated to meet UTS prior to land disposal.

2.1.4 Regulations applicable to waste impacted with PFAS/PFOA and Dioxins/Furans

Currently wastes impacted with PFAS/PFOA are not regulated under the RCRA or under TSCA. As such, acceptance criteria and disposal methods are being reviewed on a site-specific basis. Per disposal facility requirement sampling for PFAS/PFOA was performed on the five staging piles generated. Based on the analytical results PFAS/PFOA were not a disposal concern and additional sampling for PFAS/PFOA analyses was not required.

While dioxins or furans created during the controlled burn of VC do not affect the classification of contaminated soil or groundwater as a RCRA hazardous waste, dioxins and furans in RCRA hazardous soils may require treatment to meet the RCRA LDRs. Dioxins and furans are identified as UHCs and subject to treatment standards if NS will use the RCRA Alternative LDR Treatment Standards for Soil at 40 CFR 268.49 to comply with the RCRA LDR requirements. Therefore, NS must sample and document that the concentrations of dioxins and furans in RCRA hazardous contaminated soils are below their applicable LDR UTS for non-wastewater dioxins/furans found in 40 CFR 268.48 if those soils will be managed under the Alternative LDR Treatment Standards for Soil. In accordance with LDR requirements, NS will analyzing all suspect waste streams (soil, sediment, street sweepings, booms in dams) for dioxins and furans. To date, all analytical results are below 10X UTS for dioxins/furans.

2.2 Non-Hazardous Waste Regulations

All non-RCRA wastes (i.e., "solid waste" as defined by federal RCRA regulations and "waste" as defined by OEPA), will be characterized and managed in accordance with applicable OEPA and any local solid waste regulations.

3 Onsite Management of Waste

Arcadis will manage all waste, hazardous and non-hazardous, in a manner that prevents unauthorized releases to the environment. Arcadis will comply with all federal and state regulations and will adhere to best management practices while managing waste containers and storage areas to ensure proper waste management and a safer working environment. Generator requirements for management of hazardous waste are based on generator status. If more than 2,200 pounds per calendar month of hazardous waste is generated from the emergency response activities, the site will be considered a large quantity generator of hazardous waste (LQG). As a LQG, the generator must comply with waste management requirements in OAC Chapter 3745-52-17.

The following is a summary of the regulatory requirements and best management practices for onsite management of hazardous and non-hazardous wastes.

- All water/product resulting from response activities will be containerized upon generation. For bulk recovery, liquids may be temporarily stored in a vacuum truck prior to consolidation in a temporary storage tank. Recovered liquids and products may be combined provided they are associated with the same release area and the waste is compatible.
- All Soil will be stockpiled within the AOC or will be placed into containers and transported to a designated storage area. Soil piles in the AOC will be covered when soil is not actively being added or removed from the storage area.
- Waste may be transported from the point of generation to a temporary onsite storage area without triggering the requirement for waste transportation permit.

3.1 Segregation of Potential Waste Streams

NS will make a RCRA hazardous waste determination and the LDR determination in 40 CFR 268.9 (if the waste is RCRA hazardous) for all wastes at the point of generation prior to consolidating or combining wastes. This will avoid potentially mixing RCRA hazardous waste with non-RCRA waste or violating the dilution prohibition as a substitute for treatment identified by the LDR regulations at 40 CFR 268.3. All hazardous waste determinations will be made at the point of generation (§262.11) concurrent with determining whether hazardous waste is prohibited from land disposal (i.e., compliance with the LDR treatment standards in 40 CFR Part 268).

The following is a list of the waste streams generated since the work plan was originally developed.

- Hazardous waste, soil generated from excavation activities;
- Hazardous waste, water/product recovered from dams, interceptor trenches, sumps, surface puddles and storm sewer clean-outs;
- Hazardous waste, decontamination water;
- Non-hazardous and recyclable commodities;
- Municipal trash (non-impacted food waste, paper, plastic, cardboard);
- Scrap metal;
- Hazardous waste, asbestos containing materials (Transite panels) mixed with debris and soil;
- Hazardous waste, debris (silt fence, sediment curtains, booms, PPE, absorbent pads, HDPE liner, plastic pellets, vegetation);

- Non-hazardous vegetation; and
- Hazardous waste, railroad ties.

Arcadis will work with contractors to segregate wastes being generated. It is understood that segregation abilities will be limited by schedule and available storage space. However, at a minimum the following segregation will be required.

- Decontamination water will be containerized separately from surface and groundwater.
- Unimpacted municipal trash will be segregated from remediation wastes.
- Soil from the VC burn area and soil from north of the track that contains significant concentrations of flour will be placed in a separate staging pile.
- Clean soil and vegetation (outside of the AOC) will be staged separately.

During waste generation, the Arcadis Waste Advisor will confirm with the field staff that the material currently being generated is similar in composition and impacts. If field staff indicate waste has changed based on field screening, composition, or visual appearance, that material will be placed into a separate stockpile/ container.

3.2 Onsite Management Methods for RCRA Hazardous Waste and Contaminated Media

The response action is being conducted pursuant to a CERCLA Section 106 UAO (USEPA 2023). Under CERCLA section 121 and 40 CFR 300.415(j), onsite removal actions will comply with ARARs accordingly, and RCRA regulations for management of hazardous remediation waste. ARARs within the scope of this project include RCRA regulations pertaining to handling, storage, and disposal of certain waste materials and United States Department of Transportation (USDOT) regulations pertaining to transport of hazardous waste found at 49 CFR Part 171 will be met to the extend practical. Corrective Action Temporary units (40 CFR 264.553) may be used in the design, operation, monitoring, and closure of containers, tanks, or waste piles created “on-site” (as defined by CERCLA) during the response. Unified Command will be notified prior to establishment of any new temporary waste management units.

RCRA Hazardous wastes and contaminated media will be generated during excavation, consolidation, and removal of contaminated soils from drainage and other areas (40 CFR 300.415 (e)(6)) and activities associated with the removal of a release of a CWA hazardous substance (40 CFR 300.415 (c)). The following is a list of potential RCRA Hazardous waste and contaminated media that may be generated during Removal Actions. This list is not exhaustive and is not intended to prevent the generation of additional waste streams. A complete list of currently profiled waste streams is provided in Appendix B. A summary of waste generation and applicable regulations is provided in Attachment 4.

- RCRA Hazardous Waste Solids, Soil impacted with listed hazardous waste (VC);
- RCRA Hazardous Waste Solids, Soil impacted with listed hazardous waste (VC) and asbestos containing material;
- RCRA Hazardous Waste Solids, Debris impacted with listed hazardous waste (VC);
- RCRA Hazardous Waste Liquids, Water (surface water and groundwater) impacted with listed hazardous waste (VC);
- RCRA Hazardous Waste Liquids, Water (decontamination water) impacted with listed hazardous waste (VC);

3.2.1 AOC Policy

In the USEPA AOC Policy (USEPA 1996) the USEPA interprets RCRA to allow certain discrete areas of generally dispersed contamination to be considered RCRA units (usually landfills). Because an AOC is equated to a RCRA land-based unit, consolidation and *in situ* treatment of hazardous waste within the AOC does not create a new point of hazardous waste generation for purposes of RCRA. Therefore, wastes can be consolidated or treated *in situ* within an AOC without triggering LDRs or minimum technology requirements. This AOC interpretation may be applied to any hazardous remediation waste (including non-media waste) that is in or on the land. The AOC concept is particularly useful for consolidation of contiguous units or areas of contaminated soil. The AOC policy does not apply to *ex situ* waste management or transfer of wastes from one area of contamination to another.

Ohio recognizes the USEPA AOC Policy. Ohio regulations for staging piles (OAC 3745-57-74) are not applicable to soil consolidated into piles within the AOC.

Remedial activities will include excavation of impacted soil. All excavated soil will be consolidated into staging piles for sampling and storage prior to offsite disposal. All staging piles will be located within the AOC and constructed with welded HDPE liners and hay bale berms. Soil placed in staging piles will be covered whenever the pile is not actively being added to or removed from and covers will be inspected daily. Staging piles have no size restrictions other than all materials staged must be able to be contained within the designated liner. Designated staging pile locations and waste storage areas are identified in Figure 1.

The following is a summary of the staging piles names (some utilized prior to the UAO) and the current staging pile names.

Previous Name	Current Name
Staging pile 1A – Vinyl chloride release area, shallow excavation	Staging pile 1
Staging pile 1B – vinyl chloride release area, deep excavation	Staging pile 3
Staging pile 2 – butyl acrylate excavation area	Staging Pile 2
North Staging Pile	Staging pile 6
Tank Area Staging Pile	Staging pile 4
South Track west Staging Pile	Staging Pile 5
South Ditch Staging Pile	South Ditch Staging Pile

3.2.2 Corrective Action Temporary Units

The response action is being conducted pursuant to a CERCLA Section 106 UAO (USEPA 2023). Regulations applicable to the use of Corrective Action Temporary Units are found in 40 CFR 264.553 and OAC rule 3745-57-73. The use of temporary units (TUs) is being authorized by USEPA as an ARAR during a CERCLA cleanup under the Section 106 UAO.

TUs are tanks or container storage areas that USEPA has designated to be used only for the treatment or storage of remediation wastes during cleanups. TUs allow wastes to be stored for up to one year and are not limited to

media. TUs must be within contiguous property where the wastes originate. For the purpose of this removal action the contiguous property where the waste originates is defined in the UAO Amendment 1 as the “site” (UOA for Removal Actions First Amendment, March 27, 2023). EPA or authorized states can modify the design, operating and closure standards that normally apply in order to facilitate the prompt cleanup of a site. Table 2 provides a summary of standards applicable to the TUs and documents compliance with those standards.

The following TUs may be used for management of solid and liquid remediation wastes:

- Tanks: Temporary storage tanks and modular tanks including
 - Approximately 155 temporary storage tanks in Tank Farms 1, 2, 3, 4, 5, 6, Stand by Tank Farms 1, 2 and 3 and the waste water treatment plant
 - 2 one-million-gallon modular tanks located in Tank Farm 1
- Container storage areas to include:
 - Tank Farms 5&6 which contains approximately 222 roll-off boxes and vacuum boxes
 - Waste Water Treatment Plant which contains drums and totes

Unified Command will be notified prior to establishment of any new waste management units or areas.

Transportation and offsite disposal for listed hazardous waste managed in TUs is ongoing. Per 40 CFR 264.553

(c) the following is a list of factors used to establish the standards that will apply to a temporary units used onsite.

List of Factors	Answer
(1) Length of time such unit will be <u>in operation</u> ;	It is anticipated that units will be operational less than 1 year and the number of units in use will decrease as remedial activities progress.
(2) Type of unit;	Container Storage Areas: remedial waste is stored in roll-off containers, vacuum boxes, intermodal containers, drums, totes Tanks: modular tanks, temporary storage tanks
(3) Volumes of wastes to be managed;	Temporary storage tanks and Modular tanks volumes are monitored and reported daily <ul style="list-style-type: none"> • Temporary storage tanks each have a capacity of 20,000 gallons each; based on the number of temporary storage tanks onsite the maximum volume of remediation waste that could be stored in temporary storage tanks is 3.1 million gallons. • Modular tanks have a capacity of 1 million gallons each; the maximum onsite storage volume would be 2 million gallons. Roll-off containers and drums are inventoried weekly <ul style="list-style-type: none"> • Roll-off containers have a capacity of 20 cubic yards (CY) each; maximum volume would be 4,440 CY. • Drums have a capacity of 55 gallons each; maximum storage volume would be 4,125 gallons or 20 CY.
(4) Physical and chemical characteristics of the wastes to be managed in the unit;	Hazardous Waste Liquids, impacted with vinyl chloride (U043), toxic will be stored in the following TUs: <ul style="list-style-type: none"> • Tanks: Temporary storage tanks and modular tanks. • Container storage areas. Hazardous waste, Solids impacted with vinyl chloride (U043), toxic will be stored in the following TUs <ul style="list-style-type: none"> • Container storage areas.

List of Factors	Answer
	<p>Other Hazardous Waste Liquids, characteristic (corrosive, flammable) will be stored in the following TUs:</p> <ul style="list-style-type: none"> • Tanks: Temporary storage tanks. • Container storage areas. <p>Non-Hazardous Waste Liquids, managed under contained-in approval will be stored in the following TUs:</p> <ul style="list-style-type: none"> • Tanks: Temporary storage tanks.
<p>(5) Potential for releases from the unit;</p>	<p>All tanks and container storage areas are equipped with secondary containment. Any liquid releases would be recovered from the existing secondary containment network</p> <ul style="list-style-type: none"> • Tank Farms 5 and 6 have HDPE liner covering the entire tank farm area with additional HDPE installed under the temporary storage tanks. Rig mats have been placed over the liner to prevent punctures. A containment berm was created using hay bale berms overlain by HDPE liner. • Tank Farms 2 and 3, Stand by Tank Farms 2 and 3 and the waste water treatment plant have individual HDPE liners installed under each temporary storage tank and container storage area. • Both Modular tanks were installed within a single secondary containment consisting of an impermeable liner (120 mil Linear Low-Density Polyethylene (LLDPE) liner manufactured by ATARFIL), steel sheet piles, and earthen berms. • There is a network of over 10 vacuum trucks assigned to various remediation tasks. If there was a release of liquids the liquids would be immediately recovered by the vacuum trucks. Likewise, there are numerous pieces of equipment (excavators, dump trucks, bobcats) capable of recovering solids if a release occurred. <p>All tanks (temporary storage tanks and modular tanks) and containers (roll-off boxes, vacuum boxes, drums, totes) are constructed of high-quality steel and are constructed according to recognized engineering standards. Modular tank construction and installation are also described in the Modular Tank Summary Sheet (April 7, 2023, Arcadis).</p> <p>At a minimum, all tanks and container storage areas are inspected daily. Integrity issues such as leaks are immediately repaired. If the issue is not able to be immediately corrected, the waste is removed from the tank/container and placed into a new container.</p> <p>Loading and unloading of temporary storage tanks is visually monitored by someone on top of the tank to prevent overfilling and someone at the pumps; additional secondary containment (buckets/ kiddie pools) are placed under hose connections; Loading and offloading operations for the modular tanks is provided in the Modular Tank Summary Sheet (April 7,2023, Arcadis)</p>
<p>(6) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and</p>	<p>Due to the various secondary containment efforts made, specialized emergency response equipment available, monitoring of the proposed temporary units (e.g., inspections, etc.) and required final cleanup of these areas (e.g., UAO and workplans for soil and groundwater characterization, including remediation), any potential hydrogeological and other relevant environmental conditions at the site which may influence the migration of any potential releases has been minimized to the extent necessary to be protective of human health and the environment while achieving overall cleanup at the site.</p>

List of Factors	Answer
(7) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.	Except for the wastewater treatment plant all areas where tanks and containers are store are covered in the Site Security Plan. All TUs are maintained in secure areas (fenced or security guard) with access restricted to authorized personnel only. Personnel permitted in the tank and container storage areas are all 40 hour HAZWOPER trained and anyone with a hazardous waste task is RCRA trained.

3.2.3 Management of Waste in AOC and TUs

To ensure the integrity of the TUs (container storage areas and tanks) and staging piles at the site is properly maintained, the following criteria will be monitored:

- Each waste stream will be stored in a different container, tank or staging pile that is compatible with the waste contained.
- All containers and tanks will be maintained in good condition, with no leaks, corrosion, rust, or bulges. If a container is not in good condition or is leaking, transfer the waste into a container that is in good condition.
- Waste containers will be kept closed and staging piles will be covered unless waste is actively being added to the container.
- All waste containers and tanks must be labelled. All Staging piles must be identified by signs. Containers, tanks and staging piles with missing or damaged labels/sign will be relabeled. All signs and labels must be properly maintained.
- All containers will be transported to the storage area, handled, and stored in a manner to prevent them from rupturing and to prevent the waste from leaking or spilling.
- Tanks and containers will be stored in a secure area and protected from traffic. Tanks and containers will be protected from the weather to prevent freezing, volatilization, or flooding.
- At a minimum, TUs and staging piles will undergo daily visual inspection. Inspections will be documented on the Daily Inspection Form (Attachment 8).
- Tanks, TUs and staging piles will be placed on secondary containment and the secondary containment will be maintained in accordance with the Secondary Containment Standard Operating Procedures (Attachment 7).
- The liquid transfer process will be manned at both ends of the transfer. The employee manning the liquid transfer at the manhole opening on top of the temporary storage tank will be required to wear appropriate PPE. Air monitoring will be conducted in accordance with the Site Health and Safety Plan during the transfer process.
- The following Preparedness and Prevention Measures will be maintained in the storage area:
 - A list of emergency contacts,
 - Personnel working in the storage area will carry an emergency radio/cell phone anytime waste is being placed in the storage area or loaded for offsite transport, and during sampling and inspection activities,
 - Fire extinguishers if flammable liquids are present,
 - Materials to control spills (i.e., spill absorbents, extra 55 gallon drums to transfer wastes),
 - PPE supplies (i.e., eyewash, first aid kit).

3.2.4 Labeling

Waste labels must identify, at a minimum, the following information (see Attachment 2 for examples of completed labels):

- The words “Hazardous Waste,” “non-hazardous waste”, “Analyses Pending”;
- Site Address and USEPA ID number;
- Identify the hazards of the contents of the containers using a description (e.g., toxic, ignitable, reactive, corrosive, USDOT label, greenhouse gas label or Occupational Safety and Health Administration [OSHA] label); and
- Generator name and contact information.

Examples of waste labels are provided in Attachment 2. If the waste determination and hazards are unknown pending receipt of analytical data, use the “analyses pending” label. Once the analysis is reviewed the “analyses pending” label should be removed and replaced by a more appropriate label.

3.3 Onsite Management of Non-RCRA Waste

Ohio’s regulations for non-hazardous solid waste are contained in OAC 3745-27. Solid waste generated and managed prior to the UAO is discussed in Section 1.3. The current generation of non-hazardous waste is limited to municipal trash, which is placed into designated roll-off containers. General best management practices applicable to the non-hazardous wastes generated as a result of the derailment include:

- Solid waste may be stored onsite in labeled containers or stockpiles while awaiting disposal.
- All Non-Hazardous Waste for offsite disposal transport within Ohio will comply with Ohio's general safety rules administered by the Public Utilities Commission of Ohio. No transport permit is required to transport solid waste within the State of Ohio.

4 Sampling and Analyses

On February 21, 2023, NS and the USEPA entered into the UAO (CERCLA Docket No. V-W-23-C-004; USEPA 2023). The response actions are now being performed pursuant to a CERCLA Section 106 UAO. Waste sampling and onsite management activities comply with ARARs of federal, state, and local environmental laws including RCRA Subtitle C (hazardous waste identification and management), as set forth in Section 121 of CERCLA and 40 CFR 300.415(j) of the NCP.

Personnel tasked with collecting waste samples will comply with NS and Arcadis health and safety requirements. Task-specific Job Safety Analyses will be prepared to address specific hazards associated with the waste sampling activities. All personnel whose job involves management of hazardous waste will be trained in accordance with Federal RCRA requirements. PPE requirements will be determined by the Project Health and Safety Manager based on known and/or anticipated contaminants and review of SDS. Prior to opening any waste containers, field staff will check with the Health and Safety Manager regarding required PPE, respirator use, and other safety equipment.

Federal regulation states that it is the responsibility of the generator to accurately characterize the waste generated (40 CFR 262.11). In general, OEPA follows Federal guidance and leaves it up to the generator to

determine the number of samples needed to accurately represent the waste stream. Neither OEPA regulations nor the OEPA Contained-In Determination guidance provide a requirement for the number of samples per volume required.

Sampling procedures implemented prior to the UAO are discussed in Section 1.3. Due to public concern a very conservative sampling approach was utilized for characterization of the wastes generated during the initial remedial activities. All sampling and analyses plans were submitted in writing to OEPA and approved prior to execution. OEPA provided direct oversight of all sampling activities.

Sampling performed after the execution of the UAO will be provided to USEPA so they may verify compliance with ARARs. All sampling will be performed in accordance with the USEPA RCRA waste Sampling Draft Technical Guidance and the conservative approach approved by OEPA.

Arcadis will collect samples in accordance with the following:

- All waste streams will be sampled in accordance with federal and state regulations.
- Based on experience, waste streams generated during the initial response activities and surface soils will exhibit the highest concentrations of COCs and impacts. As the remediation progresses, COC concentrations will decrease. The initial sampling and analyses approach will be conservative regarding the number of samples collected and analytical parameters. It is anticipated that based on analytical data a subsequent approach with reduced sampling will be requested.
- Because there is no generator knowledge of the COCs present in the soil prior to the derailment, the initial sampling and analyses plan will include sampling for the full list of RCRA TCLP parameters to assess if the waste exhibits any characteristics of hazardous waste. Analyses will also include PCBs to assess TSCA applicability. Following review of the initial analytical data, a reduced sampling will be requested that focuses on COCs present in the waste based on the initial analyses.
- When testing to determine if a waste stream is characteristic, waste samples will be collected as a composite sample that are representative of the average properties expected to be exhibited by the whole.
- When evaluating LDR applicability, grab samples will be collected and submitted for total VOCs, total SVOCs and TCLP metals. Results will be compared to the UTS.
- The following sample nomenclature is recommended:
 - Waste Characterization Sample (WC) – Staging Pile # (SP2) – Source location (South Track)
 - Waste Characterization Sample (WC) – Container # (SB2008) – Waste Matrix (Soil and Debris)

To expedite data assessment and remedial actions, for new waste streams Arcadis will develop task-specific sampling and analyses plans specific to response activities. Arcadis will present the proposed sampling and analyses plans to the USEPA and the incident command team. New sampling plans will not be executed until NS and USEPA approval is received. Copies of previously approved task specific sampling plans are included in Attachment 3. As additional plans are approved, they will be added to Attachment 3.

NS will provide a specific sampling approach as a stand-alone request for a contained-in determination for RCRA hazardous media.

5 Waste Determinations

Under RCRA requirements, a person who generates a solid waste as defined in 40 CFR 261.2 must determine if that waste is a “listed” hazardous waste in Subpart D of 40 CFR 261, or if it exhibits a “characteristic” of hazardous waste as described in Subpart C of 40 CFR 261. With the adoption of the Generator Improvement Rule, the USEPA further emphasized that “The Generator is ultimately responsible, and always has been, for making accurate waste determinations (November 28, 2016; 81 FR 85750). OEPA regulations for applying generator knowledge to make an accurate waste determination are summarized in Hazardous Waste Evaluation and Use of Generator Knowledge in Complying with OAC rule 3745-52-11 (OEPA 2020).

A hazardous waste determination can be based on generator knowledge or analyses. All hazardous waste determinations will be made at the point of generation (§262.11) concurrent with determining whether hazardous waste is prohibited from land disposal (i.e., compliance with the LDR treatment standards in 40 CFR Part 268).

Soil impacted by the releases of hazardous materials associated with the derailment are being excavated and consolidated into 6 staging piles within the AOC. Based on generator knowledge that impacts to the soil are associated with a release of a U-listed chemical, VC (U043) the soil in all staging piles is characterized as s U043 listed hazardous waste. Based on analyses the soil in these staging piles does not exhibit any characteristics of hazardous waste and is not TSCA regulated. All waste determinations are documented in facility specific waste profiles that are signed by NS. Waste profiles and supporting analytical data are provided to USEPA for approval prior to offsite transportation and disposal. The following is a summary of the waste determinations and proposed disposal methods for each staging pile.

- Soils in staging piles 1B (currently called staging Pile 3) and 2 (currently called staging pile 2) and the North Ditch soil in roll-off boxes were characterized as listed hazardous waste, U043 (VC) to be managed in accordance with the Alternative soil standard (vinyl chloride < 10x UTS) and sent to a Subtitle C, hazardous waste landfill for direct land disposal.
- Soil in staging pile 1A (currently called pile 1) was characterized as listed hazardous waste, U043 (VC). The soil in staging pile 1A is mixed with waste and therefore the Alternative Soil Standard is not applicable. Concentrations of VC exceed LDRs, as such soil from pile 1A will require incineration.
- Soils in north staging pile (currently called Staging Pile #6) are characterized as listed hazardous waste, U043 (VC). Concentrations in one of the 10 grab samples exceeded 10x UTS as such soil from the North staging pile will require incineration.
- Based on analyses the concentrations of vinyl chloride in all 10 grab samples of the plastic pellets and the one sample of street sweepings was reported as non-detect. Because the plastic pellets and street sweepings were recovered from areas included in the AOC and the contained-in policy cannot be applied to non-media the roll-off and vacuum boxes containing plastic pellets, plastic pellets mixed with soil and street sweepings are characterized as U043 listed hazardous waste. Based on analyses these waste streams meet land disposal criteria at the point of generation and therefore will be sent to a Subtitle C, hazardous waste landfill for direct land disposal.

Upon determination that the waste generated were listed hazardous waste, the analytical results for the grab samples were compared to applicable UTS to determination of compliance with LDR and the alternative soil standard. Per 40 CFR 268.49 When applying the soil treatment standards in paragraph (c) of this section, constituents subject to treatment are any constituents listed in § 268.48 Table UTS-Universal Treatment Standards that are reasonably expected to be present.

5.1 Generator Knowledge

To make an accurate determination that the waste is a listed hazardous waste, acceptable knowledge that can be used includes waste origin, composition, the process producing the waste, and other reliable and relevant information (§262.11(c)).

To make an accurate determination that the waste is a characteristic hazardous waste, the generator must apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used to generate the waste. Acceptable knowledge includes:

- Process knowledge (e.g., information about chemical feedstocks and other inputs to the production process);
- Knowledge of products, by-products, and intermediates produced by the manufacturing process;
- Chemical or physical characterization of wastes;
- Information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste;
- Testing that illustrates the properties of the waste; or
- Other reliable and relevant information about the properties of the waste or its constituents (§262.11(d)).

The following generator knowledge will be applied to all waste streams generated:

- The derailment resulted in the release of hazardous materials. One of the materials released was VC, a listed hazardous chemical. Five railcars containing VC were breached, the breached cars were adjacent to each other in the train. The VC release was focused in the area beneath the breached cars.
- SDS (Attachment 1) will be used as generator knowledge for hazards and COCs associated with the release. Based on a review of the commodities released, there is one listed hazardous chemical, VC. Based on a review of SDS, some of the released materials are characteristically hazardous for ignitability. This property would only be applicable to recovered liquids. Other than the VC, there are no released chemicals that exceed RCRA toxicity criteria
- No UHCs are associated with the vinyl chloride however dioxins may have been generated by the fires that resulted from the explosions. As such, UHC identification includes sampling and analyses for dioxins and furans. To date no UTS exceedances have been identified.

5.2 Are the Wastes Listed?

The primary criteria for applying a listed code to waste is generator knowledge of the source of the waste and the process that generated the waste. Based on generator knowledge a release of VC, a listed hazardous chemical, occurred within the hot zone. In accordance with §261.33, the spill residuals from a listed chemical must be managed as a listed hazardous waste and carry the same codes as the chemical.

5.3 Are the Wastes Characteristic?

To support the characteristic waste determination, NS will obtain a representative sample (§260.10) of the waste for the testing. The samples will be submitted under chain of custody to an accredited laboratory and analyzed in accordance with the test method specified in subpart C of 40 CFR part 261. Results will be compared to RCRA

characteristic criteria in 40 CFR 261.21 through §261.24 (ignitability, corrosivity, reactivity, toxicity). The results of the analysis, when properly performed, are definitive for determining the regulatory status of the waste.

6 Disposal Options

The derailment occurred in Columbiana County Ohio. Based on information provided by OEPA Division of Solid Waste, the Carroll/Columbiana/Harrison (CCH) Joint Solid Waste Management District has designated 37 solid waste facilities as the only facilities that may accept non-hazardous solid waste generated within the District. A copy of the CCH designated facilities is provided in Attachment 6.

All hazardous wastes will require disposal at a RCRA permitted facility. Prior to offsite disposal of any wastes, the notification requirements in Paragraph 46.b of the UAO will be completed in addition to any notifications NS has committed to. Currently CERCLA OSR notification are being handled by the USEPA. NS will provide USEPA with the names, addresses and EPA IDs of any proposed disposal facilities and will not ship waste offsite until USEPA OSR approval is received.

Disposal options include Subtitle C landfills, treatment, disposal and Storage Facility, deep well injection sites, or hazardous waste incinerators. To date, soils have been profiled into every permitted Subtitle C facility within the continental United States. Available disposal options have been greatly impacted by concerns for public perception and negative public relations that could impact a disposal facilities ability to renew a permit or expand. Proposed waste disposal facilities for solid waste and disposal methods are summarized below. Copies of the waste profiles and approvals are provided in Appendix B.

Liquid Hazardous Waste, U043					
State	Disposal Facility	Disposal Method	Address	CERCLA Approved	ID Number
OH	WM Vickery Deepwell	Deep Well Injection	3956 State Route 412, Vickery OH 43464	Y	OHD020273819
TX	Texas Molecular	Deep Well Injection	2525 Independence Rd Deer Park, TX 77536	Y	TXD000719518
MI	Republic Romulus Deep Well Injection Site	Deep Well Injection	28470 Citrin Drive Romulus, MI 48174	N	MIR000016055

Solid Hazardous Waste, U043					
State	Disposal Facility	Disposal Method	Address	CERCLA Approved	ID Number
OH	Ross Incineration Services	Incineration	36790 Giles Rd, Grafton, OH 44044	Y	OHD48415665
OH	Heritage Thermal Services	Incineration	1250 Saint George St, East Liverpool, OH 43920	Y	OHD980613541

Solid Hazardous Waste, U043					
State	Disposal Facility	Disposal Method	Address	CERCLA Approved	ID Number
MI	Wayne Disposal Inc.	Hazardous Waste Landfill	49350 North I94 Service Dr. Belleville, MI 48111	Y	MID048090633
IN	Heritage Environmental Services, LLC	Hazardous Waste Landfill	4370 W. County Road 1275, North Roachdale IN	Y	IND980503890
TX	Waste Control Specialists (WCS)	Hazardous Waste Landfill	9998 West, TX-176 Andrews, TX 79714	Y	TXD988088464
CO	Clean Harbor Deer Trail	Hazardous Waste Landfill	108555 East Highway 36 Deer Trail, CO 80105	Y	COD991300484
TX	Clean Harbor Deer Park	Incineration	2027 Independence Parkway South La Porte, TX 77571	Y (Pending CERCLA approval)	TXD055141378

7 Emergency Response

Emergency Contact information will be posted in the waste storage area and in the job trailers of the responders. All personnel working at the derailment must be provided emergency contact information. NS will immediately be notified if any of the following occur:

- Fire, Explosion;
- Personal injury;
- Unsafe working conditions due to inclement weather;
- Spill or release.

7.1 Notification Procedures

Emergency Response and notification of releases will be performed in accordance with Section XVII of the UAO (USEPA 2023). A summary of the requirements is provided below:

If any event occurs during performance of the Work that causes or threatens to cause a release of any Waste Material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, NS will immediately take all appropriate action to prevent, abate, or minimize such release or threat of release. NS will take these actions in accordance with all applicable provisions of this Order, including, but not limited to, the Health and Safety Plan. NS will immediately notify the OSCs or, in the event of his/her unavailability, the Regional Duty Officer for Region 5 (at 312/353-2318) and Region 3 (at 215/814-3255) of the incident or Site conditions.

If a release of hazardous waste or hazardous substances occurs where NS is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community

Right-To-Know Act (EPCRA), 42 U.S.C. § 11004, NS will immediately call the OSC, or, in the event of his/her unavailability, the Regional Duty Officer at Region 5 (at 312/353-2318) and Region 3 (at 215/814-3255) and the National Response Center at (800) 424-8802. This reporting requirement is in addition to, and not in lieu of, the reporting required by CERCLA §§ 103 and 111(g), or EPCRA § 304.

For all Emergencies and releases a written report to EPA within 7 days after the onset of such event, setting forth the action or event that occurred and the measures taken, and to be taken, to mitigate any release or threat of release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release or threat of release

7.2 Spill Response

If any waste container, tank or staging pile is observed to be leaking, is in a condition that it is likely to leak, or has any damage or corrosion that may compromise the integrity of the containment, the Site Waste Coordinator should be immediately notified and necessary corrective actions will be performed. NS personnel must also be notified immediately. For leaks or threats of leaks, efforts shall be made to seal or stop the leak (with caulking foam, other sealant, or other safe measures), contain, and collect leaking material. If leaks cannot be readily stopped, then the container and/or tank shall be taken out of service and waste transferred to a non-leaking container.

- Releases that are contained by the secondary containment will be recovered as much as possible using common recovery methods such as vacuum trucks, absorbents and shovels.
- Releases to the ground will be recovered with vacuum trucks and absorbents. Following recovery of the liquids, any visibly impacted soil/gravel will be excavated and placed into containers for disposal.

8 Offsite Transportation and Disposal

Remedial waste generated at East Palestine will be shipped offsite using tanker trucks, end dump trucks, trailers carrying intermodal boxes or roll-offs and box trucks carrying drums. Loads may be shipped by road transport directly to the final disposal facility, or they may be shipped by road to a NSRC yard where they will be transloaded into rail tank cars or railcars for shipment by rail to the final disposal facility. Trucks with direct loads and trucks taking loads to the transloading yards will be loaded at the same East Palestine loading location. All trucks will be manifested, cleaned, placarded & inspected prior to leaving site in accordance with this plan. All movements of the hazardous waste will be managed in accordance with USDOT, 49 CFR Part 171-174 and OAC Rules 3745-52-30 to 3745-52-33 and OAC 3745-53-12. Hazardous waste shipments will comply with OAC Rule 3745-52-23, manifest use, hazardous waste loaded onto rail will comply with 3745-52-23(D) for rail shipments.

Procedures for Emergency Response notifications and spill response procedures are provided in Section 7. If a release were to occur during transport or transloading notification will be immediately made to USEPA at 800-282-9378, Norfolk Southern at 800-453-2530 and if greater than the reportable quantify the National Response Center at 800-424-8802.

8.1 UAO and CERCLA OSR Requirements

Prior to offsite disposal of any wastes the notification requirements in Paragraph 46.b of the UAO will be completed in addition to any notifications NS has committed to. Currently CERCLA OSR notification are being

handled by the USEPA. NS will provide USEPA with the names, addresses and EPA IDs of any proposed disposal facilities. NS will not ship waste offsite until NS receives confirmation from USEPA that the OSR approval has been received. NS will ensure that all off-site disposal facilities for RCRA hazardous wastes and non-RCRA wastes are in compliance with the CERCLA Off-Site Rule at 40 CFR 300.440 and OSR approvals will be maintained in the project records.

Additionally, in accordance with Section 46(b) of the UAO, NS will provide written notice to the appropriate state environmental official in the receiving facility's state and to the On-Scene Coordinators (OSCs) prior to any waste shipment. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice will include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. NS will also notify the state environmental official referenced above and the OSCs of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. NS will notify USEPA before the Waste Material is shipped.

8.2 Air Monitoring

A NS contractor will provide continuous air monitoring per the Air Monitoring plan during all waste loading activities, waste sampling and gauging activities. As appropriate, staff tasked with loading, sampling and gauging may be required to wear half face respirators based on air monitoring.

8.3 RCRA and USDOT Requirements for Off-Site Shipments of Hazardous Waste

USDOT regulates the identification, packaging, and transportation of hazardous materials, including hazardous waste (USDOT, 49 CFR §171-173). Offerors of hazardous material must identify the hazardous material, package, label, and mark each container of hazardous material and complete a hazardous waste manifest for the transport of hazardous waste. To ensure compliance with USDOT manifest requirements for hazardous waste generators in 40 CFR Part 262 subpart B, pre-transport requirements in 40 CFR Part 262 subpart C, notices and/or certifications required by the RCRA LDR tracking regulations in 40 CFR 268.7, every waste shipment will be managed according for the following criteria:

- Hazardous material/waste shipments will be labeled, marked, and placarded in accordance with applicable USDOT requirements.
- No waste containers will be transported offsite without approval from NS and receipt of an approved waste profile for the material being shipped from the receiving disposal facility.
- All waste shipped offsite must be accompanied by USDOT shipping papers (40 CFR Part 262 subpart B, OAC rules [3745-52-20](#) and [3745-53-21](#) and section 49 part 205 of the CFR, respectively).
- Class 9 does not require a hazmat endorsement on the drivers commercial driver's license, even if a placard is used. However, per 49 CFR 172.704 drivers without HazMat endorsements are still required to have HazMat training. (<https://www.phmsa.dot.gov/regulations/title49/interp/14-0102>). Contractors coordinating transportation will be responsible for ensuring that the drivers have the appropriate license or training.
- At a minimum, a LDR notification will accompany the first load of all hazardous waste shipped offsite.

- No waste will be accepted at the receiving facility unless it is on a pre-populated carbon copy manifest signed by Arcadis, designated rep, or NS.
- The Arcadis onsite field representative will review all shipping papers and sign the shipping papers “as an agent of Norfolk Southern Railway Company”.
- Visual inspections will be conducted by Arcadis and the USEPA/USCG prior to offsite transport to verify that the waste stream in the container is consistent with waste name identified on manifest.
- All roll-offs and dump trucks will be inspected to verify they are tarped prior to leaving the site.
- There are currently five truck wash stations (See Figure 1). All offsite waste transportation trucks must have tires washed prior to leaving the Site. Washing of additional truck surfaces will be completed as necessary.
- Prior to receiving a manifest all transportation vehicle/containers will be inspected to verify compliance with RCRA labelling and USDOT placarding requirements.
- All offsite transportation vehicles will at a minimum have wheels washed prior to leaving the site.
- There are two scales in the staging pile waste loadout area. All trucks loading from the staging piles will be weighed prior to leaving the site. Transporters are responsible for communicating general weights with the equipment operator that is loading the truck. If the scale indicates the truck is overweight, the driver will return to the staging pile where the material was derived, and the operator will remove waste.
- Liquid loads are not required to be weighed, however driver must gauge the tank and provide an estimated volume prior to leaving the site. This volume will act as the quality assurance/quality control for overweight loads.
- Trucks hauling containers (roll-offs, vacuum boxes, drums) are not required to scale out, however if the transporter is concerned, they are overweight they are encouraged to use the scales.

8.3.1 Transportation Management

NS Contractors are responsible for ensuring each transportation contractor and subcontractor confirms drivers have the appropriate training to be onsite and are authorized to haul the hazardous waste offsite to the designated disposal facility. Each driver must have:

- Appropriate USDOT training and licensed to haul USDOT class 9 hazardous waste;
- Knowledge and understanding of the:
 - Hazardous of the waste,
 - Onsite PPE requirements,
 - Truck routes onsite and to the designated facility,
 - Tarping requirements and procedures (NS training),
 - Decontamination requirements and procedures,
 - Site security requirements, and
 - Air Monitoring requirements and procedures.

8.3.2 Transloading Waste from Truck to Rail

8.3.2.1 Liquid Transfer at NSRC Yard, Lordstown, OH

The purpose of this section is to document the intended transfer methodology and operational controls to execute safe product transfer of loaded tank trucks of liquid hazardous waste, UN3082 into tank cars. The anticipated hours of operation of the transfers will be 24/7 as needed.

Truck Route to NS Yard Lordstown, OH:

- Trucks transporting hazardous waste from the East Palestine Site to the NS Yard in Lordstown, OH at 7378 South Tod Blvd., SW.
- Josh Lindley with SPSI (Exemption 6 - PII) or Robert Wood with Norfolk Southern (Exemption 6 - PII) will serve as point of contact at Lordstown, OH.
- Upon being off-loaded at the site, the trucks will reverse route back to East Palestine, OH. Cleaning of the tanks between loads is not required because these trucks are dedicated to the East Palestine hazardous waste liquids.
- Number of daily truck shipments will vary depending on availability of empty rail tank cars at Lordstown Yard. Tank cars are not loaded every day. Depending on the tank car specification, it generally takes four to five trucks to load one rail tank car.

Tank Car Management at Lordstown Yard:

- A solid rock access road for off-loading tank trailers has been established for safe access to the tank car in order to facilitate this waste water transfer.
- Receiving tank cars will be spotted on Track 106 in NS Lordstown Yard.
- Blue Flag Protection (Form is included in Attachment 8) will be in place for the track utilized for transfer operations.
- A job safety briefing will be conducted prior to any transloading operations.
- Hand brakes will be engaged, and wheel chocks shall be deployed for the receiving tank cars being loaded.
- A NS contractor will provide continuous air monitoring per the Air Monitoring Plan.
- Transfer fittings, hoses, and pumps shall be deployed, and leak tested with air or nitrogen at 20 pounds per square inch prior to transfer operations. Any leaks detected shall be corrected and retested to verify tightness prior to transferring liquids.
- Daily inspection of the rail tank car will be made while the tanks are being staged at the NS Lordstown Yard. Inspections will include looking for leaks, spills, or releases. If a leak, spill, or release is observed, corrective actions to address will be identified. The tank inspection forms is included in Attachment 8.
- Spill containment will be in place beneath truck off-load connections, transfer equipment, and receiving tank cars. Containment under rail cars, trucks and at connections/valves will be 4-mil HDPE (landfill liner) custom cut portable containment berms.
- Spill response equipment stored on-site during the transfers and immediately available includes absorbent pads, absorbent socks, and oil dry.

Hazardous Waste, Liquid Transfer Operations:

- Transfer procedures will follow AAR Pamphlet 34 guidelines.
- Hazardous waste transfer personnel will be in attendance during all transfer operations for monitoring conditions and rapid intervention contingency measures.
- Each rail tank car will be loaded to volumes roughly between 22,000 to 25,000 gallons each which is waste from four tank trucks (approx. 5,000 gallons per truck).
- After the transfer of hazardous waste and liquids has been completed, each transfer hose shall be safely cleared with nitrogen or compressed air back into the unloaded tank truck and/or into the receiving tank car prior to disassembly and container securements.
- The loaded tank car(s) will be placarded, secured, and prepared for shipment in accordance with USDOT regulations in 49 CFR Parts 172-174, including inspection of all valves, fittings, manway gaskets, and manway bolts.
- The hazardous materials shipping description is NA 3082 // Hazardous Waste, Liquid, N.O.S. (Vinyl Chloride Water) // 9 // PG III // RQ(U043) – HMRC 4860132.
- Security seals shall also be applied to the loaded tank cars.
- Tank car Waybilling information and Hazwaste Manifest PDFs will be submitted electronically to NS Revenue Waybilling via natasha.ford@nscorp.com.
- The paper manifests must be attached to a Tank Car Inspection Worksheet for each tank car loaded. The manifests and Liquid Waste Manifest Checklist must be sent to the receiving facility for completion.

Rail Service to Texas:

- There are 122 tank cars being used in the pool of cars used to transport the wastewater to Texas.
- The tank cars are being shipped to three rail stations on the Union Pacific (UP) for further handling by VLS Texas Molecular:
 - VLS, 1050 S. FM 565, Baytown, TX 77523;
 - Henniff, 4300 N. Interstate 35 E Road, Waxahachie, TX 75165; and
 - VLS, 403 Warehouse Road, Victoria, TX 77904.
- The Environmental Compliance Manager for the off-loading is Ronidell Baluyot **Exemption 6 - PII** and Project Oversight is provided by Frank Marine **Exemption 6 - PII** and Jimmy Bracher **Exemption 6 - PII**.
- The liquid will be received at the above rail yards and will be transferred back into USDOT approved trucks for transportation to the final disposal facility at 2525 Independence Parkway, South Deer Park, TX, 77536. The facility USEPA ID for Texas Molecular is TXD000719518. Transfer from the rail cars to the trucks will follow the same procedures utilized at East Palestine, OH.

Maps from East Palestine to the NSRC Lordstown Yard and maps to from each of the UP rail stations to Texas Molecular are included in Appendix C.

8.3.2.2 Solid Waste Transfers at NSRC Yard, Maple Heights, OH

Staging/Clean Box Mobilization:

- Clean EPIX specialized flat cars and boxes will be delivered to NS Maple Heights, OH Intermodal Yard (Flat cars and boxes will be stationed at Maple Heights (Cleveland, OH area) located at 5300 Greenhurst Drive, Maple Heights, OH 44137.
- Each EPIC box will be loaded onto a truck and transported from Maple Heights, OH to East Palestine, OH. At East Palestine, the intermodal box will be live loaded, placarded, and weighted. The intermodal box will then be returned to the Maple Heights Yard where it will be staged prior to being loaded onto rail.

Truck Route to Maple Heights IMF:

- Trucks transporting hazardous waste from the site to Maple Heights will do so in accordance with the approved transportation route procedure in this plan.
- Upon being loaded at the site, the truck will reverse route back to 5300 Greenhurst Drive, Maple Heights, OH.
- Upon arrival at Maple Heights, the EPIC boxes will not be removed from the chassis, and will be staged for loading onto flat cars.
- When the EPIC boxes are loaded, an intermodal crane will pick them up from the chassis and place them on a specialized flat car as they become available (no facility USEPA ID required as box just transferred from truck to rail car).
- The hazardous waste will not be removed from the EPIC box and placed into another container during shipment.

Rail Service to and from Facility:

- The containers will be staged for loading on chassies at Maple Heights but in no event will the containers be staged for more than 10 days.
- Transfer facilities can store manifested hazardous waste shipments in USDOT packages for up to 10 days without needing a hazardous waste storage permit, as described in OAC rule 3745-53-12.
- Upon placement of the boxes on the train, the movement of the boxes by rail will be in accordance with 49 CFR Part 174 – Carriage by Rail.
- As required by 49 CFR 174.9, at each location where a hazardous material is accepted for transportation or placed in a train, the carrier will inspect each rail car containing the hazardous material, at ground level, for required markings, labels, placards, securement of closures, and leakage. These inspections may be performed in conjunction with inspections required under 49 CFR Parts 215 and 232.
- The loaded intermodal/EPIC boxes are being temporarily staged at the receiving facility prior to placement on the train. This is consistent with 49 CFR 174.14, the “48-hour Rule” as recognized by the regulations and PHMSA guidance. Section 171.1(d)(1) states that the Hazardous Materials Regulations (49 CFR Parts 171-180) do not apply to “the storage of a freight container...containing hazardous material at an offeror facility prior to a carrier taking possession of the hazardous material for movement in transportation in commerce...” Per PHMSA guidance document 08-0077 the “48-hour rule is a forwarding regulation while the shipment is in transport and does not cover delivery. (Delivery requirements are outlined in §174.16). Section 174.14 (a) does not apply to intermodal transfer operations, nor does it apply to highway shipments, or residue quantities.”

- Upon placement on the train and in accordance with 49 CFR 174.14, the rail carrier must forward each shipment of hazardous materials promptly and within 48 hours (Saturdays, Sundays, and holidays excluded), after acceptance at the originating point or receipt at any yard, transfer station, or interchange point, except that where biweekly or weekly service only is performed, a shipment of hazardous materials must be forwarded on the first available train not to exceed ten days.
- The cars are placed on an interchange track after all waybill and hazardous waste manifest information are transmitted electronically to the receiving railroad. The receiving railroad continues moving those shipments in accordance with 49 CFR Parts 171 through 180.
- WCS in Andrews, TX
 - Flat cars waybilled to WCS in Andrews, TX will be interchanged in Chicago with Union Pacific Railroad to continue to the destination (rail served, direct delivery, USEPA ID Number TX988088464), where boxes will be dumped, cleaned, and returned on flat cars using the reverse route to Maple Heights, OH for reloading.

8.3.3 Truck Routes

Site truck traffic will consist of movement of waste to onsite storage area and truck traffic to facilitate offsite shipments. Onsite movement of waste will be limited to using East Taggart Street, North Pleasant Drive, and East Martin Street. Transportation plans documenting the designated routes for truck loading and truck transport through town will be provided to USEPA prior to offsite transport and disposal. Designated routes will take drivers out of East Palestine to the nearest highway. Approved truck routes for onsite and offsite movement and site features, such as scales and truck wash stations, are included as Appendix C:

1. Onsite Movement to Tank Farm Storage Areas
2. Onsite Route for Loading Offsite Disposal – Soil
3. Onsite Route for Loading Offsite Disposal – Water
4. Offsite Route for Soil to Clean Harbors Deer Trail, CO
5. Offsite Route for Soil to Heritage Thermal Services East Liverpool, OH
6. Offsite Route for Soil to Heritage Environmental Services Roachdale, IN
7. Offsite Route for Soil to Ross Incineration Services Grafton OH
8. Offsite Route for soil to NS Railyard Maple Heights, OH for disposal at Waste Control Specialists, TX
9. Offsite Route for Water to Texas Molecular Deer Park, TX
10. Offsite Route for Water to Vickery Environmental Vickery, OH
11. Offsite Route for Water to NS Lordstown Railyard, OH for disposal at Texas Molecular, TX
12. Offsite Route for Soil to Clean Harbor Deer Park, TX

NS or their designated contractor will work with the disposal facilities to determine if a designated route is needed for incoming loads.

8.4 Manifested Load Tracking

Daily reports are being provided to NS, USEPA, FRA and the onsite contractors documenting all manifested loads, the receiving facilities and waste transporters, including USEPA ID numbers. Additionally total volume and

available storage capacity is also provided in the daily reports. An example of the daily deliverable is provided in Attachment 5.

Arcadis is tracking receipt of the final manifests to ensure all manifests are received within 30 days of the load leaving the site. Exception reporting will be completed, if necessary and copies will be submitted to NS, USEPA, and OEPA.

9 Training

According to OSHA standard 29 CFR Part 1910.120, HAZWOPER training is required for any workers who perform cleanup, emergency response, or corrective actions that involve the uncontrolled release of hazardous substances. All employees involved in remedial activities and management of hazardous waste must have current HAZWOPER training. Training certificates must be maintained in the project files and be available upon request. These requirements should also be documented in the Contractor's site-specific Health and Safety Plan.

Arcadis personnel responsible for any hazardous waste task, including sampling, profiling, signing manifests, labelling, moving drums to storage, etc., will have RCRA hazardous waste training. Additional site-specific hazardous waste management training and emergency spill response training will be completed prior to management of any hazardous waste.

Arcadis personnel who are tasked with any packing and shipping samples, or signing waste manifests will have current USDOT hazardous materials transportation training per 49 CFR § 172.704.

Arcadis field personnel will comply with client-specific PPE requirements as determined by the Project Health and Safety Manager based on known and/or anticipated contaminants. Prior to opening any waste containers, field staff will check with the Health and Safety Manager regarding required PPE, respirator use, and other safety equipment.

10 Recordkeeping

NS will maintain records in accordance with Section XV of the UAO and will provide to USEPA and the States, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form. All records will be available to USEPA (Section XIV of UAO; USEPA 2023). Records will be maintained in hard copy and electronic format.

Arcadis will maintain cradle to the grave records associated with the management, transportation, and disposal of waste generated at the site. These records may include but are not limited to the following:

- Waste generation logs (Record of Waste Counting);
- Waste Profile Packages (Waste profiles, analytical, approval letters);
- Waste transportation and disposal logs;
- Shipping papers (hazardous and non-hazardous manifests) and LDR documentation;
- Certificates of Disposal; and
- Manifest Exception Reporting.

A separate transportation and disposal log will be maintained that documents the offsite disposal. An example log is provided as Attachment 4. At a minimum, the transportation and disposal log will include the following:

- Date shipped offsite;
- Date received at the disposal facility;
- Waste name;
- Name of disposal facility;
- Profile approval number;
- Transporter name;
- Volume shipped (manifested volume); and
- Volume received (weight ticket).

All waste records will be maintained in the project files for a minimum of 10 years.

11 References

- OEPA. 2000. Consolidation of Hazardous Contaminated Soils Regulated Under RCRA at VAP Sites. February.
- OEPA. 2020. Hazardous Waste Evaluation and Use of Generator Knowledge in Complying with OAC rule 3745-52-11. Available at <https://epa.ohio.gov/static/Portals/32/pdf/GeneratorKnowledge6.pdf>, October.
- USEPA. 1996. Use of the Area of Contamination (AOC) Concept During RCRA Cleanups. Office of Solid Waste and Emergency Response. March 5.
- USEPA. 1998. Management of Remediation Waste Under RCRA. EPA530-F-98-026. Available at <https://www.epa.gov/sites/default/files/2013-10/documents/remediawaste-rpt.pdf>. October.
- USEPA. 2023. Unilateral Administrative Order for Removal Actions (UAO) (CERCLA Docket No. V-W-23-C-004).

Tables

Table 1 - Regulations Applicable to Waste Types and Storage Location

Waste Name	Location	Type of Unit	Applicable Regulations	How TU Requirements Will Be Met
Hazardous Waste, Solid (U043) - Soil, < UTS - Soil, < 10X UTS - Soil, > 10X UTS	Staging Piles 1, 2, 3, 4 and 5 in the AOC Container Storage Areas: Tank Farms 5 & 6 and WWTP	Stockpile within Area of Contamination (AOC) Corrective Action Temporary Unit (TU) – container storage areas	AOC – see note 2 TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Solid (U043, ACM) - ACM, Debris and Soil	Container Storage Area: Tank Farm 5	TU – container storage area	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Solid (U043) - Debris < UTS - Debris and Soil, < UTS	Container Storage Areas: Tank Farms 5 & 6 and WWTP	TU – container storage area	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Solid (U043) - Debris > UTS - Debris and Soil, > UTS	Container Storage Areas: Tank Farm 5 & 6 and WWTP	TU – container storage area	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Solid (U043) - Waste ¹ and Debris (< 60 mm), < UTS	Container Storage Areas: Tank Farm 5 & 6 and WWTP	TU – container storage area	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Liquid (U043) - Surface Water, Storm water, groundwater	Temporary Storage Tanks in Tank Farms: 2, 3, 4, 5, 6 and WWTP Modular Tanks in Tank Farm 1	TU – Tanks and Container Storage Areas	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Hazardous Waste, Liquid (U043) - Decontamination Water	Temporary Storage Tanks in Tank Farms: 4, 6	TU – Tanks	TU - 40 CFR 264.553/ OAC 3745- 57-73	See Table 2
Non-Hazardous Water (requires approved CID)	Temporary Storage Tanks in Tank Farms: 2	NA	Industrial Wastewater - ORC 6111	NA
Municipal Trash (non-impacted waste)	Container Storage Areas: Tank Farm 5 & 6 and WWTP	NA	Solid Waste – OAC 3745-27	NA

Acronyms:

ACM = Asbestos Containing Material
AOC = Area of Contamination
CID = Contained-In Determination
EPA = Environmental Protection Agency

OEPA = Ohio Environmental Protection Agency
UTS = Universal Treatment Standard
WWTP = East Palestine Waste Water Treatment Plant

Notes

1. Waste and Debris < 60 mm includes street sweepings and plastic pellets
2. AOC policy is not codified in the regulations but has been adopted as policy by USEPA

Table 2 - Regulatory Requirements for Temporary Units

Requirements for Temporary Unites (TUs)	Regulation	How Requirements Will Be Met
Labelling	40 CFR 262.15(a)(5) OAC rule 3745-52-17(A)(5) Ohio Admin. Code 1301:7-7-50	All waste containers and tanks will be labelled with, at a minimum, the words "hazardous waste" and an indication of the hazard. All Staging piles must be identified by signs. Modular tanks will be equipped with NFPA labels. Containers, tanks and staging piles with missing or damaged labels/sign will be relabeled. All signs and labels will be properly maintained (Section 3.2.3 of Waste Management Plan).
Container Storage Areas	40 CFR 262.17(a)(1) OAC 3745-55-70 to 55-78	
Condition of containers.		All containers and tanks will be maintained in good condition, with no leaks, corrosion, rust, or bulges. If a container or tank is not in good condition or is leaking, transfer the waste into a container that is in good condition (Section 3.2.3 of Waste Management Plan).
Compatibility of waste with containers.		Each waste stream will be stored in a different container, tank or staging pile that is compatible with the waste contained (Section 3.2.3 of Waste Management Plan).
Management of containers.		Waste containers will be kept closed and staging piles will be covered unless waste is actively being added to the container. All containers will be transported to the storage area, handled, and stored in a manner to prevent them from rupturing and to prevent the waste from leaking or spilling (Section 3.2.3 of Waste Management Plan).
Inspections- containers.		At a minimum, TUs and staging piles will undergo daily visual inspection. Inspections will be documented on the Daily Inspection Form (Section 3.2.3 of Waste Management Plan).
Containment.		TUs (containers and tanks) and staging piles will be placed on secondary containment and the secondary containment will be maintained in accordance with the Secondary Containment Standard Operating Procedures (Section 3.2.3 of Waste Management Plan).
Special requirements for ignitable or reactive waste.		NA - no ignitable or reactive wastes onsite.
Special requirements for incompatible wastes.		NA - no incompatible wastes being generated.
Closure.	40 CFR 262.17(a)(8)	Notification of Closure will be provided upon removal of TUs. Data obtained from the <i>Characterization and Remediation Work Plan for Derailment - Area Soil</i> will be used to demonstrate compliance with Closure performance standards Temporary Units (container storage areas and tank systems).
Tank systems	40 CFR 264 (subpart J) OAC rule 3745-55-90 to 55-99	
Assessment of existing tank systems integrity.		Not applicable to this derailment Site, no existing tank systems were in place prior to the derailment.

Table 2 - Regulatory Requirements for Temporary Units

Requirements for Temporary Unites (TUs)	Regulation	How Requirements Will Be Met
Design and installation of new tank systems or components.		Only pre-manufactured temporary storage tanks and modular tanks will be used as TUs to store hazardous waste. All tanks (temporary storage tanks and modular tanks) and containers (roll-off boxes, vacuum boxes, drums, totes) are constructed of high quality steel and are constructed according to recognized engineering standards.
Containment and detection of releases.		<p>Farms 5 and 6 have HDPE liner covering the entire storage area with additional HDPE installed under the temporary storage tanks. Rig mats have been placed over the liner to prevent punctures. A containment berm was created using hay bale berms overlain by HDPE liner.</p> <p>Tank Farms 2 and 3, Stand by Tank Farms 2 and 3 and the waste water treatment plant have individual HDPE liners installed under each temporary tank and container storage area.</p> <p>Both Modular tanks were installed within a single secondary containment consisting of an impermeable liner (120 mil Linear Low-Density Polyethylene (LLDPE) liner manufactured by ATARFIL), steel sheet piles, and earthen berms. Modular tanks are equipped with visual and audible high-level alarms will be installed on each tank. All tank inflow pumps will be programmed to automatically shut down when the tank level reaches the maximum usable capacity as indicated by the first level alarm.</p> <p>Tank Farms are monitored 24/7 by personnel gauging tanks and providing oversight of offloading/loading operations. Release detection for temporary tanks is limited to visual inspection and observation.</p>
General operating requirements.		For modular tanks the loading and offloading procedures and tank system operations is provided in the <i>Modular Tank Summary Sheet (April7, 2023, Arcadis)</i> General operating requirements for temporary storage tanks are provided by the manufacturer.
Inspections - tank systems.		All tanks and tank systems will be inspected daily, at a minimum.
Response to leaks or spills and disposition of leaking or unfit for use tank systems.		See section 7 of Waste Management Plan for emergency response procedures and notifications in accordance with UAO.
Closure and post-closure care.		Notification of Closure will be provided upon removal of TUs. Data obtained from the Characterization and Remediation Work Plan for Derailment - Area Soil will be used to demonstrate compliance with Closure performance standards Temporary Units (container storage areas and tank systems).

Table 2 - Regulatory Requirements for Temporary Units

Requirements for Temporary Unites (TUs)	Regulation	How Requirements Will Be Met
Special requirements for ignitable waste or reactive waste - tank systems.		NA - no ignitable or reactive waste have been generated from remedial activities.
Special requirements for incompatible wastes.		NA - no incompatible wastes have been generated.

Figures

Exemption 9 - Wells



Legend

- | | | | |
|-----------------------------------|-----------------------|---------------------------------|------------------------------|
| Incident Location | Water Bypass | Waste Manifesting Trailer | Beer Cars |
| Completed Monitoring Well | Waste Staging | Tank Farm | North Ditch |
| Proposed Monitoring Well | Standby Tank Areas | VC (Area 1) | South Ditch |
| Right-Of-Way Excavation Footprint | Roll Off Staging Area | Buyl/ Solidification/Excavation | Stormwater Treatment Area |
| Stormwater Catch Basin | South Ditch Basin | Area 3 | County/State Boundary |
| Containment Feature | Burn Pit | Car Scrapping | Expanded Waste Staging Areas |

DRAFT
 Attorney-Client Privilege/Attorney Work Product/
 Prepared at the Direction of Counsel

Map Date: 4/7/2023
 Drone imagery date: 04/06/2023
 Drone North Addition imagery date: 04/02/2023

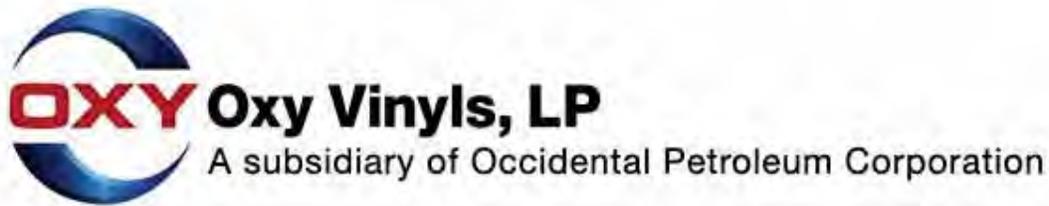
NORFOLK SOUTHERN EAST PALESTINE, OHIO	
ONSITE FEATURES	
	FIGURE 2

Attachment 1

Safety Data Sheets

SAFETY DATA SHEET

M9192 - North America - EN



VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Oxy Vinyls, LP 14555 Dallas Parkway, Suite 400 Dallas, Texas 75254-4300
24 Hour Emergency Telephone Number:	1-800-733-3665 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	VINYL CHLORIDE (MONOMER)
Synonyms:	VCM; Monochloroethylene; Chloroethene; Ethylene, chloro-; Vinyl chloride monomer
Product Use:	PVC Manufacturing
Uses Advised Against:	Aerosol propellant.
Restrictions on Use (United States):	FOR INDUSTRIAL USE ONLY.
Restrictions on Use (EU):	In accordance with Article XVII of the regulation, vinyl chloride should not be used as an aerosol propellant.
Other Global Restrictions on Use:	FOR USE IN INDUSTRIAL INSTALLATIONS ONLY. Other restrictions on use based on local, regional, or national regulations may exist and must be determined on a case-by-case basis.

VINYL CHLORIDE (MONOMER)

SDS No.: M9192
 Supersedes Date: 2015-06-April

Rev. Date: 30-Nov-2020

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

EMERGENCY OVERVIEW:

Color: Colorless
Physical State: Compressed, liquefied gas
Odor: Sweet

Signal Word: **DANGER**

MAJOR HEALTH HAZARDS: CONTAINS VINYL CHLORIDE, A KNOWN HUMAN CANCER AGENT. CONTACT WITH LIQUID MAY CAUSE FROSTBITE TO EXPOSED TISSUE. MAY PRODUCE SYMPTOMS OF CENTRAL NERVOUS SYSTEM DEPRESSION INCLUDING HEADACHE, DIZZINESS, NAUSEA, LOSS OF BALANCE AND DROWSINESS. MAY CAUSE RESPIRATORY IRRITATION. CAUSES DAMAGE TO THE NERVOUS SYSTEM, MUSKOSKELETAL SYSTEM, LYMPHATIC SYSTEM AND RESPIRATORY SYSTEM THROUGH PROLONGED OR REPEATED EXPOSURE. SUSPECTED OF CAUSING GENETIC DEFECTS. MAY CAUSE CANCER. THIS MATERIAL IS A POTENTIAL ENDOCRINE DISRUPTOR.

PHYSICAL HAZARDS: MAY MASS EXPLODE IN FIRE. EXTREMELY FLAMMABLE GAS. CONTAINS GAS UNDER PRESSURE, MAY EXPLODE IF HEATED. POLYMERIZATION CAN OCCUR.

PRECAUTIONARY STATEMENTS: Keep away from heat/ sparks/ open flames/ hot surfaces - No smoking. Requires stabilizer to prevent potential dangerous polymerization. Keep only in original container or container compatible with product (see Section 7 - Safe Storage Conditions). Ground/ bond container and receiving equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection.

HAZARD CLASSIFICATION:

GHS: PHYSICAL HAZARDS:	Flammable Gas - Cat. 1 Extremely Flammable Gas Under Pressure - Liquefied Explosive - Division 1.5
GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):	Category 3 - May cause respiratory tract irritation Category 3 - May cause drowsiness or dizziness
GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE):	Category 1 - Causes damage to the nervous system, musculoskeletal system, lymphatic system and respiratory

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

	system through prolonged or repeated exposure
GHS: CARCINOGENICITY:	Category 1A - May cause cancer
GHS: GERM CELL MUTAGENICITY:	Category 2 - Suspected of causing genetic defects

GHS SYMBOL: Flame, Gas cylinder, Exclamation mark, Health hazards**GHS SIGNAL WORD:** DANGER**GHS HAZARD STATEMENTS:****GHS - Physical Hazard Statement(s)**

- May mass explode in fire
- Extremely flammable gas
- Contains gas under pressure; may explode if heated

GHS - Health Hazard Statement(s) -

- May cause respiratory irritation
- May cause drowsiness or dizziness
- Suspected of causing genetic defects
- May cause cancer
- May cause damage to organs through prolonged or repeated exposure: (nervous system, musculoskeletal system, lymphatic system, respiratory system)

GHS - Precautionary Statement(s) - Prevention

- Keep away from heat/sparks/open flames/hot surfaces - No smoking
- Stabilize with a polymerization inhibitor (e.g. p-Methoxyphenol [Hydroquinone Monomethyl Ether]) or purging to remove oxygen
- Keep only in original container or container compatible with product (see Section 7 - Safe Storage Conditions)
- Ground/ bond container and receiving equipment
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use personal protective equipment as required
- Wear protective gloves/protective clothing/eye protection/face protection
- Wash thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area

GHS - Precautionary Statement(s) - Response

- Leaking gas fire: Do not extinguish, unless leak can be stopped safely
- Eliminate all ignition sources if safe to do so
- IF INHALED: Remove person to fresh air and keep comfortable for breathing
- IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
- IF exposed or concerned: call a POISON CENTER or doctor/physician

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

GHS - Precautionary Statement(s) - Storage

- Store in accordance with manufacturer's recommendations (See Section 7 of the SDS)
- Store in a well-ventilated place. Keep container tightly closed
- Protect from sunlight
- Store in a secure manner

GHS - Precautionary Statement(s) - Disposal

- Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

Physical Hazards Not Otherwise Classified

- Polymerization can occur

Hazard Not Otherwise Classified (HNOC)-Health

- Repeat occupational exposure to Vinyl Chloride have been associated with Raynaud syndrome and associated scleroderma-like skin changes on the hands
- Direct contact with liquid or rapidly expanding gas may cause frostbite to contacted tissue (eyes, skin, etc.)
- Vinyl Chloride is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system
- May displace oxygen and cause rapid suffocation

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Percent [%]
Vinyl Chloride	75-01-4	99 - 100

SECTION 4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer basic life support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (100-105 °F, 38-41 °C). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Not a likely route of exposure in occupational environment.

Most Important Symptoms/Effects (Acute and Delayed):

Acute Symptoms/Effects:

Inhalation (Breathing): Respiratory Tract Irritation: rhinitis, scratchy throat, cough, sore throat, runny nose, wheezing, difficulty breathing (dyspnea). Inhalation of this material may cause central nervous system depression (narcotic effects).

Skin: Skin Irritation. If spilled on skin, rapid evaporation can cause local frostbite with redness, blistering, and scaling.

Eye: Eye Irritation. Rapid evaporation can cause local frostbite with corneal and conjunctival irritation or burns. High concentrations of vapor can cause eye irritation.

Ingestion (Swallowing): Ingestion is not a likely route of exposure.

Other Health Effects: Narcotic Effects (Central Nervous System Depression): Ataxia or dizziness, drowsiness or fatigue, loss of consciousness, headache, euphoria and irritability, visual or hearing disturbances, nausea, memory loss.

Delayed Symptoms/Effects:

- Carcinogen: Long term significant occupational overexposure to VCM has been associated with a specific cancer (angiosarcoma of the liver) and is associated with hepatocellular cancer
- Suspected mutagen and suspected of causing reproductive damage
- Repeated exposure can damage the skin (scleroderma), bones (acro-osteolysis) and blood vessels in the hand (Raynaud's Syndrome)
- Scleroderma is characterized by a hardening and tightening of patches of skin
- Raynaud's syndrome is characterized by an exaggerated response to cold temperatures or emotional distress, which can cause numbness, pain or color changes in the fingers or toes

Protection of First-Aiders: Protect yourself by avoiding contact with this material. Direct contact with liquid may cause frostbite to exposed tissue (eyes, skin, etc.). Use personal protective equipment (PPE). Refer to Section 8 for specific PPE recommendations. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

Notes to Physician: There is no specific antidote. Treat symptoms with supportive care. Cardiac stimulants such as epinephrine should be avoided in persons overexposed to chlorinated hydrocarbons.

Interaction with Other Chemicals Which Enhance Toxicity: Alcohol may enhance toxic effects.

Medical Conditions Aggravated by Exposure: Alcoholic Liver Disease. Infectious Hepatitis. Cirrhosis.

SECTION 5. FIRE-FIGHTING MEASURES

Fire Hazard: Severe fire hazard. Vapor/air mixtures are explosive. Vapors or gases may ignite at distant sources and flash back. Containers may rupture or explode if exposed to heat.

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

Extinguishing Media: Stop flow of gas before extinguishing fire. Use carbon dioxide, regular dry chemical, foam or water. Use water spray to keep containers cool.

Fire Fighting: If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this can't be done, then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode.

Hazardous Combustion Products: Oxides of carbon; Hydrogen chloride; Phosgene

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Electrostatic charges may build up during handling and may form ignitable vapor-air mixtures in storage containers. Ground equipment in accordance with industry standards and best practices such as NFPA 77 [Recommended Practices on Static Electricity (2007)] and American Petroleum Institute (API) RP Recommended Practice 2003 [Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents (2008)].

Lower Flammability Level (air): 3.6%

Upper Flammability Level (air): 33.0%

Flash point: -108 °F (-78 °C)

Auto-ignition Temperature: 882 °F (472 °C)

GHS: PHYSICAL HAZARDS:

- Flammable Gas - Cat. 1 Extremely Flammable
- Gas Under Pressure - Liquefied
- Explosive - Division 1.5

Physical Hazards Not Otherwise Classified

- Polymerization can occur
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate hazard area and deny entry. Keep unnecessary and unprotected persons away. Eliminate all sources of heat and ignition. Ventilate closed spaces before entering. Wear appropriate personal protective equipment recommended in Section 8, Exposure Controls / Personal Protection, of the SDS. Refer to Section 7, Handling and Storage, for additional precautionary measures.

Environmental Precautions: Keep out of water supplies and sewers. Releases should be reported, if required,

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

to appropriate agencies.

Methods and Materials for Containment, Confinement, and/or Abatement: Remove sources of ignition. Ventilate closed spaces before entering. Stop leak if possible without personal risk. Vapors or gases may ignite at distant ignition sources and flash back. See Section 13, Disposal considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

Handling:

Precautions for Safe Handling: Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and flame. Ground any equipment used in handling. Use non-sparking tools and equipment. All energized electrical equipment must be designed in accordance with the electrical classification of the area.

Technical measures/precautions: Do not allow liquid Vinyl Chloride to be trapped between closed valves, resulting in extremely high pressure, which could result in a gasket or line leak.

Other precautions: Simple Asphyxiant - May displace oxygen and cause rapid suffocation.

Prevention of contact: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection.

Storage:

Safe Storage Conditions: Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Store in a cool, dry area. Store in a well-ventilated area. Do not enter confined spaces unless adequately ventilated. Avoid heat, flames, sparks and other sources of ignition. May be subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Technical measures: An unstable polyperoxide may be formed in Vinyl Chloride through oxidation by atmospheric oxygen in the presence of any of a variety of contaminants. Storage under these conditions for a long period increases the concentration of unstable polyperoxide to hazardous levels.

Incompatible Substances: Oxidizing agents, oxides of nitrogen, metals, aluminum, aluminum alloys, copper, metal alkyl complexes and alkali metals such as sodium, potassium and their alloys.

Packaging Material: Containers of Vinyl Chloride shall be legibly labeled either: VINYL CHLORIDE: EXTREMELY FLAMMABLE GAS UNDER PRESSURE: CANCER SUSPECT AGENT or with the additional legend, CANCER-SUSPECT AGENT applied near the label or placard. 29 CFR 1910.1017. Procedures for the handling, use, and storage of cylinders should comply with OSHA 1910.101 and 1910.169, as with the recommendations of the Compressed Gas Association. A regulated, marked area should be established where this chemical is handled, used, or stored in compliance with OSHA Standard 1910.1045.

GHS: PHYSICAL HAZARDS:

- Flammable Gas - Cat. 1 Extremely Flammable
 - Gas Under Pressure - Liquefied
-

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

- Explosive - Division 1.5

Physical Hazards Not Otherwise Classified

- Polymerization can occur

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**REGULATORY EXPOSURE LIMIT(S):**

See 29 CFR 1910.1017 (OSHA's regulatory standard for Vinyl Chloride) for additional requirements when 8-hour action level (0.5 ppm TWA) is exceeded. Listed below for the product components that have regulatory occupational exposure limits (OEL's).

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Vinyl Chloride 75-01-4 (99 - 100 %)	1 ppm	5 ppm	-----

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

Component	Canada - TWAs	Canada - STELs	Canada - Ceilings
Vinyl Chloride 75-01-4 (99 - 100 %)	Ontario - 1 ppm (TWA) Alberta - 1 ppm (TWA) Alberta - 2.6 mg/m ³ (TWA) British Columbia - 1 ppm (TWA)	-----	-----

NON-REGULATORY EXPOSURE LIMIT(S):

Listed below are the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Vinyl Chloride 75-01-4 (99 - 100 %)	1 ppm	-----	-----	-----	-----	-----	-----

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

ENGINEERING CONTROLS: Use closed systems when possible. Provide local exhaust ventilation where vapor may be generated. Ensure compliance with applicable exposure limits.

VINYL CHLORIDE (MONOMER)

SDS No.: M9192
Supersedes Date: 2015-06-April

Rev. Date: 30-Nov-2020

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. If eye contact is likely, wear chemical resistant safety goggles. Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear appropriate chemical resistant clothing.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Butyl rubber, Nitrile, Silver Shield®, Viton®

Respiratory Protection: Refer to 29 CFR 1910.1017 for selection of respirators for vinyl chloride. A respiratory protection program that meets applicable regulatory requirements must be followed whenever workplace conditions warrant use of a respirator.

HYGIENE MEASURES: Obtain proper training prior to use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Compressed, liquefied gas
Color:	Colorless
Odor:	Sweet
Molecular Weight:	62.5
Molecular Formula:	C ₂ H ₃ Cl
pH:	Not applicable
Melting Point/Range:	-244.82 (°F)
Freezing Point/Range:	No data available
Flash point:	-108 °F (-78 °C)
Vapor Pressure:	2660 mmHg @ 25 °C
Vapor Density (air=1):	2.15
Relative Density/Specific Gravity (water=1):	0.91 @ 25/25 °C
Water Solubility:	2.7 g/L
Partition Coefficient (n-octanol/water):	Log Kow = 1.36
Auto-ignition Temperature:	882 °F (472 °C)
Decomposition Temperature:	Not applicable
Odor Threshold [ppm]:	Not reliable to prevent excessive exposure
Evaporation Rate (ether=1):	>15
VOC Content (%):	100%
Volatility:	100%
Flammability (solid, gas):	No data available
Lower Flammability Level (air):	3.6%
Upper Flammability Level (air):	33.0%
Viscosity:	Not applicable

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Generally stable at normal temperatures and pressures; however, may violently polymerize or generate other hazardous conditions when not stabilized and/or stored correctly.

Reactivity: Explosive or violent polymerization can occur when exposed to air, sunlight, or excessive heat if not properly stabilized. Polymerizes exothermically in the presence of light, air, oxygen or catalyst. Reacts with the following incompatible materials and create a strong exothermic reaction: oxygen, moisture, polymerization additives, copper, aluminum, oxidizing agents, strong alkalis, and strong acids. Reacts with air to form peroxides. Shock sensitive compounds may be formed.

Possibility of Hazardous Reactions: In addition to violent polymerization, Vinyl Chloride may also react with organic peroxides, strong bases, and oxidizing agents resulting in potential heat generation, fire, and/or explosion. At 15°C – 208°C ultraviolet (UV) can initiate a reaction between VCM with excessive oxygen, to produce peroxides (e.g. polyperoxides, polyvinyl peroxides) which can automatically ignite on their own to create an explosive condition under extreme heat or impact. Peroxides may also cause uncontrollable polymerization reactions at high concentrations or temperatures. Further heating to 358°C causes peroxides to decompose to formaldehyde, carbon monoxide and hydrogen chloride.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Electrostatic charges may build up during handling and may form ignitable vapor-air mixtures in storage containers. Ground equipment in accordance with industry standards and best practices such as NFPA 77 [Recommended Practices on Static Electricity (2007)] and American Petroleum Institute (API) RP Recommended Practice 2003 [Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents (2008)]. Avoid air and sunlight. Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

Incompatible Substances: Oxidizing agents, oxides of nitrogen, metals, aluminum, aluminum alloys, copper, metal alkyl complexes and alkali metals such as sodium, potassium and their alloys.

Hazardous Decomposition Products: Oxides of Carbon, Chlorine, Hydrogen chloride, Phosgene.

Hazardous Polymerization: Polymerization can occur. Exposure to the following conditions or mixtures with the following elements and materials can cause explosive or violent polymerization of VCM: Air, Sunlight, Excessive heat, Oxidizers, Catalytic metals, such as copper, aluminum and their alloys and certain catalytic impurities. Avoid elevated temperatures, oxidizing agents, oxides of nitrogen, oxygen, peroxides, other polymerization catalysts/initiators, air and sunlight.

SECTION 11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS:

ACUTE TOXICITY:

Eye contact: Causes eye irritation. Rapid evaporation of the material may cause frostbite.

Skin contact: Causes skin irritation. Rapid evaporation of the material may cause frostbite.

VINYL CHLORIDE (MONOMER)

SDS No.: M9192
Supersedes Date: 2015-06-April

Rev. Date: 30-Nov-2020

Inhalation: May cause respiratory tract irritation. Several minutes of exposure to high, but attainable concentrations (over 1000 ppm) may cause difficulty breathing, central nervous system depression and symptoms such as: ataxia or dizziness, drowsiness or fatigue, loss of consciousness, headache, euphoria and irritability, visual and or hearing disturbances, nausea, memory loss. Prolonged, high concentration exposures may cause unconsciousness or death. Cardiac: Acute intoxication may cause irregular heartbeats.

Ingestion: Not a likely route of exposure in occupational settings.

CHRONIC TOXICITY:

Chronic Effects: Chronic exposure to Vinyl Chloride monomer (VCM) may cause damage to the nervous system, respiratory system, musculoskeletal system, and lymphatic system. Occupational overexposure has produced a specific cancer (angiosarcoma of the liver) and is associated with hepatocellular cancer. Repeated prolonged exposure may damage: skin (scleroderma), bones (acro-osteolysis), blood vessels in the hands (Raynaud's Syndrome). Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child. Reproductive effects and testes damage occurred in rats exposed to vinyl chloride. These endpoints, however, were generally noted at concentrations greater than those necessary to cause liver damage.

SIGNS AND SYMPTOMS OF EXPOSURE:

Inhalation (Breathing): Respiratory Tract Irritation: rhinitis, scratchy throat, cough, sore throat, runny nose, wheezing, difficulty breathing (dyspnea). Inhalation of this material may cause central nervous system depression (narcotic effects).

Skin: Skin Irritation. If spilled on skin, rapid evaporation can cause local frostbite with redness, blistering, and scaling.

Eye: Eye Irritation. Rapid evaporation can cause local frostbite with corneal and conjunctival irritation or burns. High concentrations of vapor can cause eye irritation.

Ingestion (Swallowing): Ingestion is not a likely route of exposure.

Other Health Effects: Narcotic Effects (Central Nervous System Depression): Ataxia or dizziness, drowsiness or fatigue, loss of consciousness, headache, euphoria and irritability, visual or hearing disturbances, nausea, memory loss.

Interaction with Other Chemicals Which Enhance Toxicity: Alcohol may enhance toxic effects.

GHS HEALTH HAZARDS:

GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Category 3 - May cause respiratory tract irritation
 Category 3 - May cause drowsiness or dizziness

GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE): Category 1 - Causes damage to the nervous system, musculoskeletal system, lymphatic system and respiratory system through prolonged or repeated exposure

GHS: CARCINOGENICITY: Category 1A - May cause cancer

GHS: GERM CELL MUTAGENICITY: Category 2 - Suspected of causing genetic defects

TOXICITY DATA:

PRODUCT TOXICITY DATA: Data is from studies conducted internally.

LD50 Oral: > 4,000 mg/kg oral-rat LD50	LD50 Dermal: -----	LC50 Inhalation: -----
--	------------------------------	----------------------------------

COMPONENT TOXICITY DATA: The component toxicity data is populated by the LOLI database and may differ

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

from the product toxicity data given.

Component	Oral LD50	Dermal LD50	Inhalation LC50
Vinyl Chloride	500 mg/kg (Rat)	No data available	18 pph (15-min Rat)

Skin/Eye Irritation/Corrosion: Liquid Vinyl Chloride may freeze tissue and produce a chemical burn as it evaporates, causing damage to the underlying tissue.

Skin Absorbent / Dermal Route: NO.

RESPIRATORY OR SKIN SENSITIZATION: Not classified as a skin or respiratory sensitizer per GHS criteria.

CARCINOGENICITY: Category 1A - May cause cancer. Vinyl Chloride is a multi-site carcinogen in animals inducing angiosarcomas at many sites (though predominantly liver), hepatocellular tumors, tumors of the mammary, and lung tumors. Worker cohort studies indicate that occupational exposure to Vinyl Chloride is not strongly associated with increased mortality risk from respiratory disease or cancers other than liver and biliary tract cancers (predominantly angiosarcomas).

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): Category 3 - May cause drowsiness or dizziness. Category 3 - May cause respiratory irritation.

SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure): Chronic exposure to Vinyl Chloride monomer (VCM) may cause damage to the nervous system, respiratory system, musculoskeletal system, and lymphatic system.

INHALATION HAZARD: Inhalation is associated with both acute and chronic health effects.

IN-VITRO / IN-VIVO GENOTOXICITY: Vinyl Chloride has tested positive for mutagenicity in in vitro and in vivo test systems. Category 2 - Suspected of causing genetic defects. Mutagenic in bacteria studies. Genetic studies in animals were negative in some cases and positive in others.

REPRODUCTIVE TOXICITY: In a recent well conducted combined two-generation reproductive/developmental study in rats the NOAEC for developmental effects was 1,100 ppm (2816 mg/m³), the highest dose tested (Thornton, 2002). There was no effect of treatment on sex ratio, fetal body weight or number or type of malformations. The substance is not classified as toxic for reproduction, according to GHS.

DEVELOPMENTAL TOXICITY: No maternal or developmental toxicity was seen at the 10 ppm exposure level. At the 100 ppm level only maternal toxicity seen was an increase in kidney weight relative to Day 20 gestation weight. At the 1100 ppm exposure level both kidney and liver weights increased. No developmental toxicity was seen at either level.

ASPIRATION HAZARD: Not classified as an aspiration hazard per GHS criteria.

TOXICOKINETICS: The pattern of pulmonary elimination of 10 and 1000 ppm Vinyl Chloride is similar first-order kinetics, with half-lives of 20.4 and 22.4 minutes respectively. The half-lives for the initial phase of excretion of (14)°C radioactivity in urine were 4.6 and 4.1 hours, respectively.

METABOLISM: Vinyl Chloride is primarily and rapidly metabolized in the liver, and this metabolism is saturable. The first step in the metabolism of vinyl chloride is oxidation, which is predominantly mediated by human cytochrome P450 (CYP) 2E1, to form the highly reactive chloroethylene oxide, which can spontaneously rearrange to chloroacetaldehyde. Conjugation of chloroethylene oxide and chloroacetaldehyde with glutathione (GSH) eventually

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

leads to the major urinary metabolites N-acetyl-S-(2-hydroxyethyl)cysteine and thiodiglycolic acid. Chloroethylene oxide and chloroacetaldehyde can also be detoxified to glycolaldehyde by microsomal epoxide hydrolase (mEH) and to the urinary metabolite chloroacetic acid by aldehyde dehydrogenase 2 (ALDH2), respectively.

BIOLOGICAL DISTRIBUTION: See Toxicokinetics above.

ENDOCRINE DISRUPTOR: Vinyl Chloride is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system.

NEUROTOXICITY: Neurotoxicity/ Neuropathological alterations were observed in rats exposed to 78,000 mg/ m³ vinyl chloride (4 hr/day, 5 days/week) for 12 months. During the exposure period, the rats were slightly soporific. Histopathology revealed diffuse degeneration in the gray and white matter of the brain and at the level of the white matter zones of reactive gliosis. In the cerebellum, atrophy of the granular layer and degeneration of Purkinje cells were most prominent. In addition, peripheral nerve bundles were often surrounded and invaded by fibrotic processes.

IMMUNOTOXICITY: The major immunological abnormalities reported in vinyl chloride disease patients include hyperimmunoglobulinemia with a polyclonal increase in IgG, cryoglobulinemia, cryofibrinogenemia, and in vivo activation of complement.

Hazard Not Otherwise Classified (HNOC)-Health

- Repeat occupational exposure to Vinyl Chloride have been associated with Raynaud syndrome and associated scleroderma-like skin changes on the hands
- Direct contact with liquid or rapidly expanding gas may cause frostbite to contacted tissue (eyes, skin, etc.)
- Vinyl Chloride is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system
- May displace oxygen and cause rapid suffocation

SECTION 12. ECOLOGICAL INFORMATION**ECOTOXICITY (EC, IC, and LC):**

<i>Component:</i>	<i>Freshwater Fish:</i>	<i>Invertebrate Toxicity:</i>	<i>Algae Toxicity:</i>	<i>Other Toxicity:</i>
Vinyl Chloride 75-01-4 (99 - 100 %)	*LC50 Brachydanio rerio: 210 mg/L 96h	-----	*EC50 Chilomonas paramecium (48 h) =943 mg/L	No data available

Aquatic Toxicity:

This material is believed to be practically non-toxic to fish on an acute basis (LC50>100 mg/L).

FATE AND TRANSPORT:

PERSISTENCE: Tropospheric half-life is estimated to be 23 hours. If released to air, this material will remain in the gas phase. If released to soil, volatilization will occur, but material that does not volatilize may be highly

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

mobile. If released to water, evaporation will occur.

BIODEGRADATION: Vinyl chloride may degrade under anaerobic conditions.

BIOCONCENTRATION: Bioconcentration potential is low (BCF <100 or log Kow <3).

BIOACCUMULATIVE POTENTIAL: This material is believed not to bioaccumulate.

MOBILITY IN SOIL: The Koc of vinyl chloride has been reported to be 57. According to a classification scheme, this Koc value suggests that vinyl chloride is expected to have high mobility in soil.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:

Reuse or reprocess, if possible. May be subject to disposal regulations. Dispose in accordance with all applicable regulations. Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U043 and D043, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.40 CFR 240-280, 300-306, 702-799 (USEPA). If the material is to be incinerated, the chemical incinerator must be equipped with an afterburner (to assure complete combustion to prevent the formation of phosgene) and an acid scrubber (to remove the halo acids produced).

Container Management:

Refer to manufacturer/supplier for information on recovery/recycling. Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

Contaminated Material:

Contaminated material must be disposed of in a permitted waste management facility.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1086
PROPER SHIPPING NAME: Vinyl chloride, stabilized
HAZARD CLASS/ DIVISION: 2.1
LABELING REQUIREMENTS: 2.1
RQ (lbs.): RQ 1 Lbs. (Vinyl chloride)

Special provisions for transport: 21, B44, N86, T50.

VINYL CHLORIDE (MONOMER)

SDS No.: M9192
Supersedes Date: 2015-06-April

Rev. Date: 30-Nov-2020

Packaging Exceptions 306.
Non-bulk Packaging: 304.
Bulk Packaging: 314, 315.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1086
SHIPPING NAME: Vinyl chloride, stabilized
CLASS OR DIVISION: 2.1
LABELING REQUIREMENTS: 2.1
RQ (lbs): RQ 1 Lbs. (Vinyl chloride)

MARITIME TRANSPORT (IMO / IMDG)

UN NUMBER: UN1086
PROPER SHIPPING NAME: Vinyl chloride, stabilized
HAZARD CLASS / DIVISION: 2.1
LABELING REQUIREMENTS: 2.1

AIR TRANSPORT (ICAO / IATA)

Special Instructions CAO: IATA Certificate for shipping personnel is required

SECTION 15. REGULATORY INFORMATION**U.S. REGULATIONS****OSHA REGULATORY STATUS:**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	U.S. DOT Hazardous Substances/ RQs	CERCLA Hazardous Substances / RQs	CERCLA Section 302 EHS EPCRA RQs	Section 302 Threshold Planning Quantity (TPQ)
Vinyl Chloride 75-01-4 (99 - 100)	1 lbs(RQ)	1 lb	Not listed	Not Listed

SARA EHS Chemical (40 CFR 355.30)

Not regulated.

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard, Chronic Health Hazard, Fire Hazard, Sudden Release of Pressure

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):

Physical Hazard - Flammable (gases, aerosols, liquids, or solids)
Physical Hazard - Gas Under Pressure
Physical Hazard - Explosive
Health Hazard - Carcinogen

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

Health Hazard - Germ Cell Mutagenicity
 Health Hazard - Specific Target Organ Toxicity (STOT) Single Exposure (SE)
 Health Hazard - Specific Target Organ Toxicity (STOT) Repeat Exposure (RE)

EPCRA SECTION 313 (40 CFR 372.65):

The following chemicals are listed in 40 CFR 372.65 and may be subject to Community Right-to Know Reporting requirements.

Component	SARA 313 - Emission Reporting	SARA 313 PBT
Vinyl Chloride 75-01-4 (99 - 100)	0.1% (de minimis concentration)	Not Listed

DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):

This product is regulated under the U.S. Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) as follows:

- DHS - Security Issue
- DHS - Release Screening Threshold Quantity
- DHS - Release Min. Concentration

Component	DHS - Security Issues	DHS-Sabotage Screening Threshold Qty.	DHS-Sabotage Min. Conc.	DHS-Theft Screening Threshold Qty.	DHS-Theft Min. Conc.	DHS-Release Screening Threshold Qty.	DHS-Release Min. Conc.	CWC Toxic Chemicals:
Vinyl Chloride 75-01-4 (99 - 100)	Release - Flammable	Not Listed	Not Listed	Not Listed	Not Listed	10000 lb STQ	1.0% Minimum Concentration	Not Listed

OSHA SPECIFICALLY REGULATED SUBSTANCES:

OSHA 29 CFR 1910.1017 (Vinyl chloride); The U.S. Department of Labor, Occupational Safety and Health Administration specifically regulates manufacturing, handling and processing of vinyl chloride. Such regulations have been published at 29 CFR 1910.1017.

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

The PSM standard may apply to processes which involve a flammable liquid or gas in a quantity of 10,000 pounds (4535.9 kg) or more.

Component	EPA RMP Toxic or Flammable TPQ	PSM - Highly Hazardous Substances, Toxics and Reactives	Flash Point
Vinyl Chloride 75-01-4 (99 - 100)	Flammable (10000 lb threshold quantity)	Not Listed	-78°C Open cup

EPA'S CLEAN WATER AND CLEAN AIR ACTS:

Regulated as noted in table below.

Component	Clean Water Act - Priority Pollutants	CAA - ODS CLASS 1 AND CLASS 2	CAA - Volatile Organic Compounds (VOCs) in SOCM1	CAA - HON Rule - Organic HAPs	CAA - Hazard Air Pollutants	CAA - Urban HAPs List (Integrated Urban Strategy)	SNAP - Substitutes for ODS	EPA RMP Toxic or Flammable TPQ
Vinyl Chloride 75-01-4 (99 - 100 %)	Present	Not Listed	Present	Present	Present	Present	Not Listed	Flammable (10000 lb threshold quantity)

NATIONAL INVENTORY STATUS**U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):**

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8
Vinyl Chloride 75-01-4 (99 - 100 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed

CANADIAN CHEMICAL INVENTORY: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Vinyl Chloride 75-01-4 (99 - 100)	Listed	Not Listed

STATE REGULATIONS**California Proposition 65:**

Proposition 65 regulations should be consulted regarding warning requirements, if any, for the final product and whether any exposures to listed chemicals would be within a safe level (i.e., a No Significant Risk Level or NSRL for carcinogens, and/or a Maximum Allowable Dose Level or MADL for reproductive toxins).

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Vinyl Chloride 75-01-4 (99 - 100 %)	Listed	Not Listed	Not Listed	Listed	Not Listed

Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Vinyl Chloride	2001	carcinogen; flammable - fourth degree; mutagen	Listed	Listed	Present	Present	Present

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Canadian Federal Regulation Status: The component(s) in this product formulation are listed on Canadian Domestic Substance List (either DSL/NDSL). The component(s) information is listed below:

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	CANADIAN CHEMICAL INVENTORY:	NDSL:
Vinyl Chloride 75-01-4 (99 - 100)	Present (009) Present (065)	Part 1, Group 1 Substance Part 4 Substance	Not Listed	Listed	Not Listed

SECTION 16. OTHER INFORMATION

VINYL CHLORIDE (MONOMER)

SDS No.: M9192

Rev. Date: 30-Nov-2020

Supersedes Date: 2015-06-April

Prepared by: Occidental Chemical Corporation - HES&S Product Stewardship Department

Rev. Date: 30-Nov-2020

Reason for Revision:

- Revised Major Health Hazards: SEE SECTION 2
- Revised GHS Information: SEE SECTION 2
- Updated First Aid Measures: SEE SECTION 4
- PPE recommendations have been modified: SEE SECTION 8
- Toxicological Information has been revised: SEE SECTION 11
- Updated Disposal Considerations. SEE SECTION 13
- Updated Transportation Information: SEE SECTION 14
- A component has been added to the formulation. SEE SECTION 3

IMPORTANT:

The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and Occidental Chemical Corporation assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any federal, state, local or foreign laws.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

End of Safety Data Sheet

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : PROPYLENE GLYCOL USP/EP
Synonyms : Propylene Glycol, 1,2-Propanediol, 1,2-Dihydroxypropane, Monopropylene Glycol
Substance name : 1,2-Propanediol
Substance No. : 200-338-0 (EINECS)
Chemical characterization : Glycols

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Solvent; Intermediate; Functional Fluids
Prohibited uses : Active pharmaceutical ingredient (API); Tobacco; Electronic cigarettes (E-cigarettes); Cannabis; Theater fogs; Artificial smoke; Cat food; Sprinkler systems over 30%

1.3 Details of the supplier of the safety data sheet

Company	Registration number	Telephone
E-mail address :		
Responsible/issuing person		

1.4 Emergency telephone number

Poison Center:
National Poisons Information Service
UK: +44 131 242 1383
24 hours all days

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : 1,2-Propanediol
EC-No. : 200-338-0 (EINECS)

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Propylene Glycol	57-55-6 200-338-0	>= 99.5

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : May cause irritation of the eyes, skin and mucous membranes.
Always observe self-protection methods
Move out of dangerous area.
Remove contaminated shoes and clothing.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Remove to fresh air.
In the case of inhalation of aerosol/mist consult a physician if necessary.
Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Avoid inhalation of hot vapors or extremely high concentrations of aerosols.

In case of skin contact : Wash skin thoroughly with mild soap and water.

In case of eye contact : Flush eyes with water thoroughly and continuously for 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).

Risks : May cause eye, skin, and respiratory tract irritation.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.

Unsuitable extinguishing media : Do not use solid water stream.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Although water soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer/public waters.

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment. Clean-up to be performed only by trained and properly equipped personnel.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version	Revision Date:	SDS Number:	Date of last issue: 11/05/2021
1.9	01/16/2023	BE129	Date of first issue: 11/29/2010

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Extinguish ignition sources; stop release; prevent flow to sewers or public waters.
Notify fire and environmental authorities.
Impound/recover large land spill; soak up small spill with inert solids.
Soak up small spills with inert solids.
Use suitable disposal containers.
On water, material is soluble and may float or sink.
Contain/collect rapidly to minimize dispersion.
Disperse residue to reduce aquatic harm.
Report per regulatory requirements.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Handle empty containers with care - residue can burn if heated.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Handle empty containers with care - residue may be combustible. Empty containers should be thoroughly rinsed with copious amounts of clean water. The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.

Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : See Section 1.2.
Development of Exposure Scenarios for such use are not required by the REACH Regulation other than what is provided in other sections of this SDS.

No use-specific Risk Management Measures are proposed.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Propylene Glycol	57-55-6	STEL (particulate)	30 mg/m ³	WEL (GB)
		TWA (particulate)	10 mg/m ³	WEL (GB)
		STEL (total vapour and particulates)	450 ppm 1,422 mg/m ³	WEL (GB)
		TWA (total vapour and particulates)	150 ppm 474 mg/m ³	WEL (GB)

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
1,2-Propanediol	Workers	Inhalation	Long term	168 mg/m ³
	Remarks: Systemic effects			
	Workers	Inhalation	Long term	10 mg/m ³
Remarks: Local effects				
	General Population	Inhalation		50 mg/m ³
Remarks: Systemic effects				
	General Population	Inhalation		10 mg/m ³
Remarks: Local effects				

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
1,2-Propanediol	Fresh water	260 mg/l
	Remarks: Assessment factor - 50	
	Sea water	26 mg/l
Remarks: Assessment factor - 500		
	Water	183 mg/l
Remarks: Intermittent Releases, Assessment factor -100		
	Fresh water sediment	572 mg/kg dw
	Sea sediment	57.2 mg/kg dw

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

	Soil	50 mg/kg dw
	Sewage Treatment Plant	20000 mg/l
	Remarks:Assessment factor -1	

8.2 Exposure controls

Engineering measures

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal protective equipment

- Eye protection : Use splash goggles when eye contact due to splashing or spraying liquid is possible.
- Hand protection
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
- Remarks : Not normally considered a skin hazard.
- Skin and body protection : No special clothing/skin protection equipment is recommended under normal conditions of anticipated use.
Where use can result in skin contact, practice good personal hygiene.
- Respiratory protection : No special respiratory protection equipment is recommended under anticipated conditions of normal use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : liquid (20 °C, 1,013.25 hPa)
- Color : clear
- Odor : Little or no odor.
- Odor Threshold : No value available.
- pH : no data available
- Melting point/range : < -20 °C
- Boiling point/boiling range : 184 °C (1003.20 hPa)
- Flash point : 104 °C(1000.010 hPa)
- Flammability (solid, gas) : Not applicable
- Upper explosion limit / Upper flammability limit : ~ 17.4 vol%
- Lower explosion limit / Lower flammability limit : ~ 2.4 vol%

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9	Revision Date: 01/16/2023	SDS Number: BE129	Date of last issue: 11/05/2021 Date of first issue: 11/29/2010
----------------	------------------------------	----------------------	---

Vapor pressure	:	0.2 hPa (25 °C)
Relative vapor density	:	no data available
Density	:	1.03 g/cm ³ (20 °C)
Solubility(ies) Water solubility	:	completely soluble (20 °C) pH: 7.1 - 7.8
Partition coefficient: n- octanol/water	:	log Pow: -1.07 (20.5 °C) pH: 6.2 - 6.4
Decomposition temperature	:	Incomplete combustion may produce carbon monoxide and other toxic gases.
Viscosity Viscosity, kinematic	:	42.1 mm ² /s (25 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension	:	71.6 mN/m, 1.01 g/l, 21.5 °C
Self-ignition	:	> 400 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Not expected to occur. This material is stable when properly handled and stored.
---------------------	---	--

10.4 Conditions to avoid

Conditions to avoid	:	High temperatures, oxidizing conditions. May degrade when exposed to light or other radiation sources.
---------------------	---	---

10.5 Incompatible materials

Materials to avoid	:	Reacts with strong oxidizing agents. Strong acids. Isocyanates.
--------------------	---	---

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

10.6 Hazardous decomposition products

Combustion may produce oxides of carbon and other toxic gases.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Propylene Glycol:

Acute oral toxicity : LD50 Oral (Rat): 22,000 mg/kg

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Remarks : Based on skin irritation values, not classified.
May cause slight transient skin irritation.

Components:

Propylene Glycol:

Assessment : Non-irritating to the skin.

Serious eye damage/eye irritation

Product:

Remarks : May produce minimal, fully reversible eye irritation.

Components:

Propylene Glycol:

Assessment : Non-irritating to the eyes.

Respiratory or skin sensitization

Product:

Test Type : Respiratory sensitization
Remarks : no data available

Test Type : Skin sensitization
Remarks : Skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Components:

Propylene Glycol:

Assessment : Not sensitizing

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment : No adverse effect observed.

Components:

Propylene Glycol:

Germ cell mutagenicity- Assessment : Negative for genotoxicity using both in vitro and in vivo tests.

Carcinogenicity

Product:

Carcinogenicity - Assessment : No adverse effect observed.

Components:

Propylene Glycol:

Carcinogenicity - Assessment : No increase in tumors was noted in rats and dogs exposed to high concentrations of propylene glycol via the diet for up to 2 years. The incidence of skin tumors was unaltered in mice following dermal application over a lifetime.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No adverse effect observed.
No adverse effect observed.

Components:

Propylene Glycol:

Reproductive toxicity - Assessment : No adverse effect on reproductive performance was seen in male and female mice exposed continuously to high doses of propylene glycol in drinking water for up to 3 months. Results from studies in pregnant rats, mice, hamsters and rabbits demonstrate that propylene glycol is not teratogenic or fetotoxic.

STOT-single exposure

Product:

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Assessment : Based on single exposure toxicity values, not classified.

Components:

Propylene Glycol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

Product:

Assessment : Based on repeated exposure toxicity values, not classified., Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity.

Components:

Propylene Glycol:

Assessment : Long-term studies in rodents conducted with high oral doses found no evidence of adverse effects. Ingestion by cats, however, results in species-specific hematological changes.

Repeated dose toxicity

Components:

Propylene Glycol:

Species : Rat, male
NOAEL : 1,700 mg/kg
Application Route : Oral
Remarks : Long-term studies in rodents conducted with high oral doses found no evidence of adverse effects. Ingestion by cats, however, results in species-specific hematological changes.

Species : Rat
LOAEL : 0.16 mg/l
Application Route : Inhalation
Remarks : High aerosol concentrations inhaled by rats caused minor nasal and ocular signs that may have been due to mild irritation or drying effects on mucous membranes.

Further information

Product:

Remarks : no data available

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Components:

Propylene Glycol:

Remarks : Propylene glycol is of low acute toxicity after ingestion or skin contact. It is not a skin irritant, although repeated contact with undiluted product may dry the skin resulting in cracking and/or fissuring. It is not a skin sensitizer, however skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application. Neat liquid may also produce minimal, fully reversible eye irritation. Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity. Results from studies in pregnant rats, mice, hamsters and rabbits demonstrate that propylene glycol is not a teratogen while no adverse effect on reproductive performance was apparent in male and female mice exposed continuously to high doses of propylene glycol in drinking water for up to 3 months. It is not genotoxic in vitro or in vivo. There was no increase in tumors in rats or dogs exposed to high concentrations of propylene glycol via the diet for up to 2 years, while the incidence of skin tumors was unaltered in mice following dermal application over a lifetime.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Based on acute aquatic toxicity values, not classified.

Chronic aquatic toxicity : Not classified, based on readily biodegradability and low acute toxicity.

Components:

Propylene Glycol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 HOURS

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia): 18,340 mg/l
Exposure time: 48 HOURS

EC50 (Americamysis bahia (Mysid shrimp)): 18,800 mg/l
Exposure time: 96 HOURS

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapita (formerly Selenastrum

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

plants capricornutum): 19,000 mg/l
Exposure time: 96 HOURS

EC50 (Skeletonema costatum): 19,100 mg/l
Exposure time: 96 HOURS

Toxicity to microorganisms : NOEC (Pseudomonas putida): 20,000 mg/l
Exposure time: 18 HOURS

Toxicity to fish (Chronic toxicity) : Remarks: Not expected to exhibit chronic toxicity to fish.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
Exposure time: 7 DAY
Species: Ceriodaphnia dubia

12.2 Persistence and degradability

Components:

Propylene Glycol:

Biodegradability : Result: Biodegradable
Biodegradation: 72 - 100 %

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: This material is not expected to bioaccumulate.

Components:

Propylene Glycol:

Bioaccumulation : Bioconcentration factor (BCF): 0.09
Remarks: This material is not expected to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -1.07 (20.5 °C)

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Stability in soil
Remarks: Low potential for soil adsorption expected

Components:

Propylene Glycol:

Distribution among environmental compartments : Remarks: Environmental releases of propylene glycol will tend to partition to water and soil, with little potential for evaporation.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Not applicable.

Components:

Propylene Glycol:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.6 Other adverse effects

Product:

Environmental fate and pathways : No additional information available.

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Propylene Glycol:

Environmental fate and pathways : This material is not expected to persist in the environment and should pose little if any physical or toxicological hazards.

Additional ecological information : This material is expected to be non-hazardous to aquatic species.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.
Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

SECTION 14: Transport information

14.1 UN number

Not regulated for transport

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

14.2 UN proper shipping name

Not regulated for transport

14.3 Transport hazard class(es)

Not regulated for transport

14.4 Packing group

Not regulated for transport

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

No special precautions required.

14.7 Maritime transport in bulk according to IMO instruments

Description of the goods	PROPYLENE GLYCOL
Pollution category	OS
Ship type	NONE

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

Country/Region	Inventory	Status Description
Australia	AICS	Listed
Canada	DSL	Listed
China	IECSC	Listed
Europe	REACH	See Compliance Statement*
Japan	ENCS	Listed
Korea	K REACH	Pre-registration period *
New Zealand	NZIoC	Listed
Philippines	PICCS	Listed
United Kingdom	UK REACH	See Compliance Statement*
United States of America	TSCA	Listed

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Taiwan	TCSCA	Listed
Turkey	KKDIK	Pre-registration period *

* If the product has been purchased domestically from the notifying/registering legal entity of the LyondellBasell group of companies. We confirm that all substances (in this preparation) have been registered in accordance with the deadlines set forth in the applicable regulation. During the "Pre-registration period", we confirm that all substances in this preparation have been pre-registered or, where required under the regulation, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in the regulation. For more information, please contact reach@lyondellbasell.com.

† For more information on the status of this material, please contact chemical control at global.chemical.control@lyondellbasell.com.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

WEL (GB) : United Kingdom (GB)
WEL (GB) / TWA : TWA
WEL (GB) / STEL : STEL

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version	Revision Date:	SDS Number:	Date of last issue: 11/05/2021
1.9	01/16/2023	BE129	Date of first issue: 11/29/2010

Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

UK / EN

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : PROPYLENE GLYCOL INDUSTRIAL
CAS Number: : 57-55-6
Chemical characterization : Glycols
Chemical name : 1,2-Propanediol
Synonyms : Propylene Glycol, 1,2-Propanediol, 1,2-Dihydroxypropane, Monopropylene Glycol

Identified uses : Solvent; Intermediate; Functional Fluids

Prohibited uses : Pharmaceutical excipient; Active pharmaceutical ingredient (API); Applications involving human consumption; Cosmetics; Toiletries; Personal care products; Tobacco; Electronic cigarettes (E-cigarettes); Cannabis; Theater fogs; Artificial smoke; Cat food (21 CFR 582.1666); Sprinkler systems over 30%

Company Address

Lyondell Chemical Company
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone

Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone number

CHEMTREC USA 800-424-9300
LYONDELL 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION**GHS Classification**

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Label elements

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Other hazards

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substances****Components**

Chemical name	CAS-No. EC-No.	Weight %	Component Type
Propylene Glycol	57-55-6	>= 99.0 %	A

Key:
(A) Substance**4. FIRST AID MEASURES**

- General advice : May cause irritation of the eyes, skin and mucous membranes. Always observe self-protection methods. Move out of dangerous area. Remove contaminated shoes and clothing. Show this material safety data sheet to the doctor in attendance.
- If inhaled : Remove to fresh air. In the case of inhalation of aerosol/mist consult a physician if necessary. Not expected to present a significant inhalation hazard under anticipated conditions of normal use. Avoid inhalation of hot vapors or extremely high concentrations of aerosols.
- In case of skin contact : Wash skin thoroughly with mild soap and water.
- In case of eye contact : Flush eyes with water thoroughly and continuously for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

Notes to physician

- Symptoms : High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
- Hazards : This product is of low acute toxicity.
May cause irritation of the eyes, skin and mucous membranes.
Hot vapors may cause lung damage.
- Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.
- Unsuitable extinguishing media : Do not use solid water stream.
- Specific hazards during fire fighting : Heat from fire can generate flammable vapor.
When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined.
Vapors may be heavier than air.
May travel long distances along the ground before igniting and flashing back to vapor source.
Fine sprays/mists may be combustible at temperatures below normal flash point.
Fight fire from a safe distance/protected location.
Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries.
Use water spray/fog for cooling.
Avoid frothing/steam explosion.
Although water soluble, may not be practical to extinguish fire by water dilution.
Notify authorities immediately if liquid enters sewer/public waters.
- : Refer to NFPA Code 13 for guidance in using propylene glycol in sprinkler system applications.
- Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

limited protection.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Clean-up to be performed only by trained and properly equipped personnel.
- Environmental precautions : Try to prevent the material from entering drains or water courses.
- Methods for containment /
Methods for cleaning up : Extinguish ignition sources; stop release; prevent flow to sewers or public waters.
Notify fire and environmental authorities.
Impound/recover large land spill; soak up small spill with inert solids.
Soak up small spills with inert solids.
Use suitable disposal containers.
On water, material is soluble and may float or sink.
Contain/collect rapidly to minimize dispersion.
Disperse residue to reduce aquatic harm.
Report per regulatory requirements.

7. Handling and storage**Precautions for safe handling**

- Advice on safe handling : Handle empty containers with care - residue can burn if heated.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Handle empty containers with care - residue may be combustible.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

necessary dilution of the concentrated product before use, or it can be properly discarded.

Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

Other data : No decomposition if stored and applied as directed.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Ingredients with workplace control parameters**

Consult local authorities for acceptable exposure limits.

Exposure controls**Engineering measures**

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal protective equipment

Respiratory protection : No special respiratory protection equipment is recommended under anticipated conditions of normal use.

Hand protection : Not normally considered a skin hazard.
Use chemical resistant gloves appropriate to conditions of use.
Wear chemical resistant gloves such as:
Nitrile rubber
Latex

Eye and face protection : Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Skin and body protection : No special clothing/skin protection equipment is recommended under normal conditions of anticipated use.
Where use can result in skin contact, practice good personal hygiene.

Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.
Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid at 20 °C (1,013.25 hPa)
Color	: Clear, colorless.
Odor	: Little or no odor.
Odor Threshold	: No value available.
Flash point	: 104 °C at 1000.010 hPa (750.071 mm Hg)
Lower explosion limit	: ~ 2.4 vol%
Upper explosion limit	: ~ 17.4 vol%
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Autoignition temperature	: > 400 °C at 1000.10 - 1014.40 hPa
Decomposition temperature	: not determined
Melting point/range	: < -20 °C
Boiling point/boiling range	: 184 °C at 1003.20 hPa
Vapor pressure	: 0.2 hPa at 25 °C
Density	: 1.03 g/cm ³ at 20 °C
Water solubility	: 20 °C

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

Miscible in water.

Partition coefficient: n-octanol/water	:	log Pow: -1.07 at 20.5 °C
Viscosity, kinematic	:	42.1 mm ² /s at 25 °C
Relative vapor density	:	no data available
Surface tension	:	71.6 mN/m 1.01 g/l at 21.5 °C
Explosive properties	:	Not explosive
Other Information	:	No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	Stable under recommended storage conditions.
Hazardous reactions	:	Not expected to occur. This material is stable when properly handled and stored.
Conditions to avoid	:	High temperatures, oxidizing conditions. May degrade when exposed to light or other radiation sources.
Materials to avoid	:	Reacts with strong oxidizing agents. Strong acids. Isocyanates.
Hazardous decomposition products	:	Carbon Monoxide and other toxic vapors.
Thermal decomposition	:	Incomplete combustion may produce carbon monoxide and other toxic gases.

11. TOXICOLOGICAL INFORMATION

Product Summary	:	The below given information is based on the assessment of the product including impurities.
Acute toxicity	:	
Acute oral toxicity	:	Based on acute toxicity values, not classified.

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

- : LD50 Oral: > 5,000 mg/kg
Species: Rat
- Acute inhalation toxicity** : Based on acute toxicity values, not classified.
- : LC50 (Inhl): > 20 mg/l
Exposure time: 4 HOURS
Species: Rabbit
- Acute dermal toxicity** : Based on acute toxicity values, not classified.
- : LD50 Dermal: > 2,000 mg/kg
Species: Rabbit
- Skin corrosion/irritation** : Based on skin irritation values, not classified.
May cause slight transient skin irritation.
- Serious eye damage/eye irritation** : Based on eye irritation values, not classified.
May produce minimal, fully reversible eye irritation.
- Respiratory or skin sensitization** : Respiratory sensitization
Not classified
no data available
- : Skin sensitization
Not classified
Skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application.
- Chronic toxicity**
- Carcinogenicity : Not classified
No adverse effect observed.
- Germ cell mutagenicity : Not classified
No adverse effect observed.
- Reproductive toxicity**
- Effects on fertility / : Not classified
Effects on or via lactation : No adverse effect observed.

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

- Effects on Development : Not classified
No adverse effect observed.
- Target Organ Systemic Toxicant - Single exposure** : Based on single exposure toxicity values, not classified.
- Target Organ Systemic Toxicant - Repeated exposure** : Based on repeated exposure toxicity values, not classified., Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity.
- Aspiration hazard** : Based on physico-chemical values or lack of human evidence, not classified.

12. Ecological information**Ecotoxicology Assessment**

- Short-term (acute) aquatic hazard** : Based on acute aquatic toxicity values, not classified.
- Long-term (chronic) aquatic hazard** : Not classified, based on readily biodegradability and low acute toxicity.
- Toxicity to fish** : Low acute toxicity to fish
- Toxicity to daphnia and other aquatic invertebrates** : Low acute toxicity to aquatic invertebrates.
- Toxicity to algae** : Low toxicity to algae.
- Toxicity to bacteria** : Low toxicity to sewage microbes.
- Toxicity to fish (Chronic toxicity)** : No study available.
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)** : Low chronic toxicity to aquatic invertebrates.

Persistence and degradability

- Biodegradability** : Rapidly degradable.

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

: Biodegradation: 72 - 100 %
(After 28 days in a ready biodegradability test)

Bioaccumulative potential

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility in soil

Distribution among environmental compartments : Type: Stability in soil
Low potential for soil adsorption expected

: Type: Stability in water
Hydrolytically stable.
Molecular structure includes no hydrolysable functional groups.

Other adverse effects

Environmental fate and pathways : No additional information available.

Other information

Additional ecological information : No additional information available.

13. Disposal considerations**Waste treatment methods**

Product : Comply with federal, state, or local regulations for disposal.
Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Avoid flameouts and assure that emissions comply with all applicable standards/regulations.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

14. TRANSPORT INFORMATION

Not regulated for transport

BLG (MARPOL Annex II)
Description of the goods : PROPYLENE GLYCOL

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

Pollution category : Z
Ship type : NONE

15. REGULATORY INFORMATION**TSCA 12b**

No substances are subject to TSCA 12(b) export notification requirements.

Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

No SARA Hazards

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

This material does not contain listed substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm that would require warning under the California Proposition 65 State Drinking Water and Toxic Enforcement Act.

However, LyondellBasell has not tested for the presence of listed chemical substances.

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

57-55-6 Propylene Glycol

No components are subject to the Massachusetts Right to Know Act.

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

57-55-6 Propylene Glycol

PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

Other international regulations**Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

Contact product.safety@lyb.com for additional global inventory information.

16. OTHER INFORMATION**Material safety datasheet sections which have been updated:**

Revised Section(s): 15 16

HMIS Classification

: Health Hazard: 0
 Flammability: 1
 Physical hazards: 0



PROPYLENE GLYCOL INDUSTRIAL

Gen. Variant: SDS_US_GHS

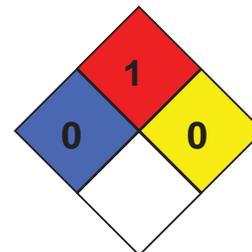
Version 1.4

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE130

NFPA Classification : Health Hazard: 0
Fire Hazard: 1
Instability: 0

**Disclaimer**

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

In addition to any prohibitions of use specifically noted in this document, LyondellBasell may further prohibit or restrict the sale of its products into certain applications. For further information, please contact a LyondellBasell representative or visit the LyondellBasell website at: <https://www.lyondellbasell.com/en/products-technology/product-safety-stewardship/>
The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: 2-Ethylhexyl Acrylate, 50 ppm MEHQ

Issue Date: 11/25/2022

Print Date: 02/04/2023

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: 2-Ethylhexyl Acrylate, 50 ppm MEHQ

Recommended use of the chemical and restrictions on use

Identified uses: Chemical intermediate.

Uses advised against: Unreacted monomer is not appropriate for use in cosmetic applications, such as artificial nail products.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids - Category 4

Skin irritation - Category 2

Skin sensitisation - Sub-category 1B

Specific target organ toxicity - single exposure - Category 3

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Combustible liquid.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements

Prevention

Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Avoid breathing mist or vapours.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.

Response

IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents and/or container to an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Ethyl hexyl acrylate

This product is a substance.

Substance name: Ethyl hexyl acrylate

CASRN: 103-11-7

Component	CASRN	Concentration
Ethyl hexyl acrylate	103-11-7	>= 99.6 - <= 100.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed:

Causes skin irritation. May cause an allergic skin reaction. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If burn is present, treat as any thermal burn, after decontamination. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. Due to irritant properties, swallowing may result in burns and/or ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal or esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Dry chemical. Dry sand.

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides.

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire..

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Do not breathe vapours or spray mist. Avoid contact with eyes. Do not swallow. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Use with local exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition. This product contains inhibitor to stabilize it during shipment and storage. The effectiveness of the inhibitor is dependent on the presence of dissolved oxygen. In order to maintain sufficient dissolved oxygen in the liquid to avoid polymerization, the monomer must always be stored with a vapor space oxygen concentration of 5% to 21% (air). If the material is stored longer than six months (from date of manufacture) in a closed container, replenish the vapor space with fresh air to avoid depletion of the dissolved oxygen.

Storage stability

Shelf life: Use within 12 Month

Storage temperature: < 38 °C (< 100 °F)

Do not store with the following product types: Strong oxidizing agents. Explosives. Gases.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Ethyl hexyl acrylate	Dow IHG	TWA	3 ppm

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Examples of acceptable glove barrier materials include: Butyl rubber. Avoid gloves made of: Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body

reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Colorless
Odor	Sweet
Odor Threshold	No test data available
pH	No test data available
Melting point/range	Not applicable to liquids
Freezing point	-90 °C (-130 °F) <i>Literature</i>
Boiling point (760 mmHg)	216 °C (421 °F) <i>Literature</i>
Flash point	closed cup 82 °C (180 °F) <i>Literature</i>
Evaporation Rate (Butyl Acetate = 1)	0.3 <i>Literature</i>
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	0.7 % vol <i>Literature</i>
Upper explosion limit	8.2 % vol <i>Literature</i>
Vapor Pressure	0.12 mmHg at 20 °C (68 °F) <i>Literature</i>
Relative Vapor Density (air = 1)	6.4 <i>Literature</i>
Relative Density (water = 1)	0.885 <i>Literature</i>
Water solubility	0.1 g/L at 25 °C (77 °F) <i>Literature</i>
Partition coefficient: n-octanol/water	log Pow: 4.09 <i>Estimated.</i>
Auto-ignition temperature	252 °C (486 °F) <i>Literature</i>
Decomposition temperature	No data available
Dynamic Viscosity	1.54 cP at 25 °C (77 °F) <i>Literature</i>
Kinematic Viscosity	No test data available
Explosive properties	Not explosive
Oxidizing properties	No
Molecular weight	184.3 g/mol <i>Literature</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Excessive aging, heat, contamination with polymerization catalysts, oxygen-free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization. Excessive aging, heat, contamination with polymerization catalysts, oxygen-free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization.

Chemical stability: Unstable at elevated temperatures.

Possibility of hazardous reactions: Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Combustible liquid. Inhibitor is added to this product to prevent polymerization. However, this material can undergo hazardous polymerization. An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers. Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Inhibitor is added to this product to prevent polymerization. However, this material can undergo hazardous polymerization.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Do not blanket or purge with an inert gas to avoid depleting the oxygen concentration. Avoid direct sunlight or ultraviolet sources. Heat, flames and sparks.

Inhibitor: Methoxyphenol Inhibitor Concentration (ppm): 40 - 60
Phenothiazine Inhibitor Concentration (ppm): 0.4 - 1.6

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure

Inhalation, Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute Toxicity Endpoints:

Not classified based on available information.

Acute oral toxicity

Information for the Product:

Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

Based on product testing:

LD50, Rat, male and female, 4,435 mg/kg OECD 401 or equivalent

Information for components:

Ethyl hexyl acrylate

LD50, Rat, male and female, 4,435 mg/kg OECD 401 or equivalent

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Based on product testing:

LD50, Rabbit, 7,522 mg/kg

Information for components:

Ethyl hexyl acrylate

LD50, Rabbit, 7,522 mg/kg

Acute inhalation toxicity

Information for the Product:

Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. Signs and symptoms of excessive exposure may include: May cause dizziness and drowsiness. Headache. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed.

LC50, Rat, male and female, 8 Hour, vapour, > 1.19 mg/l No deaths occurred following exposure to a saturated atmosphere.

Information for components:

Ethyl hexyl acrylate

LC50, Rat, male and female, 8 Hour, vapour, > 1.19 mg/l Other guidelines No deaths occurred following exposure to a saturated atmosphere.

Skin corrosion/irritation

Causes skin irritation.

Information for the Product:

Based on product testing:

Brief contact may cause severe skin irritation with pain and local redness.

Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Information for components:

Ethyl hexyl acrylate

Brief contact may cause severe skin irritation with pain and local redness.
Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

Based on product testing:
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Information for components:

Ethyl hexyl acrylate

May cause slight temporary eye irritation.
Corneal injury is unlikely.

Sensitization

For skin sensitization:

May cause an allergic skin reaction.

For respiratory sensitization:

Not classified based on available information.

Information for the Product:

For skin sensitization:
Has caused allergic skin reactions in humans.
Has caused allergic skin reactions when tested in guinea pigs.
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Information for components:

Ethyl hexyl acrylate

For skin sensitization:
Has caused allergic skin reactions in humans.
Has caused allergic skin reactions when tested in guinea pigs.
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Information for the Product:

Product test data not available.

Information for components:

Ethyl hexyl acrylate

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory system

Aspiration Hazard

Not classified based on available information.

Information for the Product:

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Information for components:

Ethyl hexyl acrylate

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified based on available information.

Information for the Product:

In animals, effects have been reported on the following organs:
Respiratory tract.

Information for components:

Ethyl hexyl acrylate

In animals, effects have been reported on the following organs:
Respiratory tract.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Has caused tumors in skin painting tests in animals. Positive findings are believed to be secondary to chronic irritation/tissue injury.

Information for components:

Ethyl hexyl acrylate

Has caused tumors in skin painting tests in animals. Positive findings are believed to be secondary to chronic irritation/tissue injury.

Carcinogenicity

Component

Ethyl hexyl acrylate

List

IARC

Classification

Group 2B: Possibly carcinogenic to humans

Teratogenicity

Not classified based on available information.

Information for the Product:

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Information for components:

Ethyl hexyl acrylate

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Information for components:

Ethyl hexyl acrylate

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

Not classified based on available information.

Information for the Product:

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Information for components:

Ethyl hexyl acrylate

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

General Information

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

Toxicity

Acute toxicity to fish

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 1.81 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1.3 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, *Desmodesmus subspicatus* (green algae), static test, 72 Hour, Growth rate inhibition, 1.71 mg/l, OECD Test Guideline 201 or Equivalent

Long-term (chronic) aquatic hazard

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), 21 d, number of offspring, 0.19 mg/l

Persistence and degradability

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 70 - 80 %

Exposure time: 15 d

10-day Window: Not applicable

Biodegradation: > 90 %

Exposure time: 14 d

Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.60 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	17 - 27 %
10 d	19 - 52 %
20 d	19 - 58 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals
Atmospheric half-life: 6.4 Hour
Method: Estimated.

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 4.09 Estimated.

Bioconcentration factor (BCF): 270 - 282 Fish Estimated.

Mobility in soil

Partition coefficient (Koc): 429 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. FOR UNUSED AND UNCONTAMINATED PRODUCT, always send to a licensed disposer per applicable regulations. Consult the local waste disposal expert for the appropriate waste disposal method. Recover or recycle, if possible. Otherwise, send it to a licensed disposer.

Contaminated packaging: Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s.(2-Ethyl hexyl acrylate)
UN number	NA 1993
Class	CBL
Packing group	III

Classification for SEA transport (IMO-IMDG):

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Not regulated for transport Consult IMO regulations before transporting ocean bulk
---	---

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Skin corrosion or irritation
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
2-Ethylhexyl acrylate	103-11-7

California Prop. 65

WARNING: This product can expose you to chemicals including Ethyl hexyl acrylate, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA

Health	Flammability	Instability
2	2	2

Revision

Identification Number: 241035 / A001 / Issue Date: 11/25/2022 / Version: 9.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time weighted average

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown

above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US



SAFETY DATA SHEET

SECTION 1 - Identification

1.1 Product Identifier

- Product Name • CARPOL® GP-3510 Polyol
Synonyms • Polyether Polyol; Glycerine-Propoxylated-Ethoxylated Polyol

1.2 Recommended Use of the Chemical and Restrictions on Use

- Recommended Use • Component of Polyurethane
Restrictions on Use • Industrial use only

1.3 Details of the Supplier of the Safety Data Sheet

- Manufacturer • Carpenter Co.
5016 Monument Ave.
Richmond, Virginia 23230
(804) 233-0606

1.4 Emergency Telephone

- Chemtrec • (800) 424-9300 (24-hr number)

SECTION 2 - Hazards Identification

2.1 Classification of the Substance or Mixture

This material is not classified as hazardous under the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.2 GHS Label Elements

This material is not classified as hazardous under the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.3 Hazards Not Otherwise Classified

None identified

SECTION 3 - Composition/Information on Ingredients

3.1 Substance

Name	Identifier	% (weight)
Polyether Polyol	CAS# 9082-00-2	100

3.2 Mixtures

Material does not meet the criteria of a mixture according to United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

SECTION 4 - First Aid Measures

4.1 Description of First Aid Measures

- | | |
|----------------------------|--|
| By route of inhalation | • Remove victim to fresh air. |
| By route of dermal contact | • Wash thoroughly with soap and water. |
| By route of eye contact | • Flush with plenty of water. |
| By route of ingestion | • If victim is conscious, give 1 to 2 glasses of water.
Do not induce vomiting unless directed to do so by medical personnel. |

4.2 Most Important Symptoms and Effects, Acute and Chronic

Refer to Section 11 Toxicological Information.

4.3 Indication of Immediate Medical Attention and Special Treatment If Needed

Treat symptomatically and supportively.

SECTION 5 - Firefighting Measures

5.1 Extinguishing Media

- | | |
|--------------------------------|--|
| Suitable Extinguishing Media | • Dry chemical, foam, carbon dioxide, water fog or fine spray. |
| Unsuitable Extinguishing Media | • Do not use direct water spray. May spread fire. |

5.2 Special Hazards Arising From the Substance or Mixture

- May produce oxides of carbon on combustion. Smoke may be toxic and/or irritating.

5.3 Special Protective Actions for Firefighters

- Responding personnel must wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Spray cool water on fire exposed containers to reduce risk of rupture.

SECTION 6 - Accidental Release Measures

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

- Isolate the area. Keep unauthorized people away. Do not touch or walk through the spilled material. Spilled material may be slippery. Ensure adequate ventilation in enclosed area. Eliminate all ignition sources. Use protective equipment appropriate for the size of the spill.

6.2 Environmental Precautions

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

6.3 Methods and Materials for Containment and Clean Up

Methods	<ul style="list-style-type: none"> • Stop leak, dam spill, and transfer liquid into a suitable container. • Collect residue with absorbent and transfer into a suitable container for proper disposal.
Materials	<ul style="list-style-type: none"> • Inert absorbent (sand, earth or similar).

6.4 Reference to Other Sections

- Refer to Section 8 for exposure control and personal protective equipment information.
- Refer to Section 12 for ecological information.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Keep containers tightly closed when not in use.
- Do not eat, drink, or smoke in working area.
- Avoid contact with eyes and minimize contact with skin
- Use good safety and industrial hygiene practices.
- Wash thoroughly after handling.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Storage	<ul style="list-style-type: none"> • Store materials in a cool, dry place. Do not transport with oxidizers.
Incompatibilities	<ul style="list-style-type: none"> •Oxidizing materials, strong alkalis and acids, Isocyanates.

SECTION 8: Exposure Controls/ Personal Protection

8.1 Control Parameters

Exposure Limits/Guidelines	<ul style="list-style-type: none"> • None established.
----------------------------	---

8.2 Exposure Controls

Engineering Controls	<ul style="list-style-type: none"> • Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable exposure limits.
Eye/Face Protection	<ul style="list-style-type: none"> • Safety glasses with side shields. Chemical goggles if there is a significant risk of splashing.
Respiratory Protection	<ul style="list-style-type: none"> • None required under normal use. If product is heated or sprayed, appropriate respiratory protection may be needed.
Skin Protection	<ul style="list-style-type: none"> • Wear suitable working clothes and shoes.

- Depending on the potential for exposure, chemical resistant gloves may not be needed (e.g. incidental use). As with any chemical, skin contact should be minimized with good work practices and PPE where needed. Wear chemical resistant gloves appropriate for the intended use. Consult glove manufacturers for assistance in choosing appropriate gloves.

Ingestion

- Do not eat, drink or smoke in work area. Wash hands before eating or smoking.

Additional Protection Measures

- None

SECTION 9: Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	• Liquid	Odor	• Low odor
Color	• Clear	Odor Threshold	• No data available
General Properties			
Boiling Point	• No data available	Melting Point	• No data available
Decomposition Temperature	• No data available	pH	• 7.0 (ave)
Density (at 25°C)	• No data available	Water Solubility	• Low
Solvent Solubility	• No data available	Viscosity (at 25°C)	• No data available
Explosive Properties	• No data available	Specific Gravity/Relative Density	• 1.01 (H ₂ O=1)
Volatility			
Vapor Pressure	• No data available	Vapor Density	• No data available
Evaporation Rate	• No data available	VOC (Vol.)	• No data available
Volatiles (Vol.)	• No data available		
Flammability			
Flash Point	• >200°F (PMCC)	LEL	• No data available
UEL	• No data available	Flammability (solid, gas)	• No data available
Auto-ignition Temperature	• No data available		
Environmental			
Octanol/Water Partition Coefficient	• No data available		

9.2. Other Information

No additional information available

SECTION 10: Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability

Stable under normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

No hazardous reactions if handled and stored as recommended.

10.4 Conditions to Avoid

Elevated temperatures

10.5 Incompatible Materials

Oxidizing materials, strong alkalis and acids, isocyanates.

10.6 Hazardous Decomposition Products

No data available.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity

Chemical	CAS #	LD ₅₀ oral rat	LD ₅₀ dermal rabbit	LC ₅₀ inhalation rat
Polyether Polyol	9082-00-2	>2000 mg/kg	>2000 mg/kg	Not available

Skin Corrosion/Irritation

- Based on available information, skin corrosion/irritation is not expected under normal conditions of use.

Serious Eye Damage/Irritation

- Based on available information, eye damage/irritation criteria are not met.

Respiratory or Skin Sensitization

- Based on available information, sensitization criteria are not met.

Germ Cell Mutagenicity

- Available studies have not indicated this material to be a mutagen.

Carcinogenicity

- This product does not contain any component that is considered a human carcinogen by IARC, ACGIH, OSHA or NTP.

Reproductive Toxicity

- No data available

Specific Target Organ Toxicity (single exposure)

- No data available

Specific Target Organ Toxicity (repeated exposure)

- No data available

Aspiration Hazard

- No data available

11.2 Potential Health Effects

Inhalation

- | | |
|---------|--|
| Acute | • Not expected to be a hazard due to low vapor pressure. |
| Chronic | • None known. |

Skin

- | | |
|---------|---------------|
| Acute | • None known. |
| Chronic | • None known. |

Eye

- | | |
|---------|------------------------------|
| Acute | • May cause mild irritation. |
| Chronic | • None known. |

Ingestion

- | | |
|---------|--|
| Acute | • Small amounts swallowed may cause gastrointestinal discomfort. |
| Chronic | • None known. |

SECTION 12: Ecological Information

12.1 Ecotoxicity

This product is not expected to cause significant effects in the aquatic environment.

12.2 Persistence and Degradability

No data available

12.3 Bioaccumulative Potential

No data available

12.4 Mobility in Soil

No data available

12.5 Other Adverse Effects

No data available

SECTION 13: Disposal Considerations

13.1 Waste Disposal Method

Product Waste

- Do not dump into any sewers, on the ground, or into any body of water.
- All disposal methods must be in compliance with Federal, State/Provincial, and local regulations.

Packaging Waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport Information

U.S. DOT/IATA/IMDG/ADR/RID

Not regulated as hazardous for shipment.

SECTION 15: Regulatory Information

15.1 Regulatory Status

CERCLA Hazardous Substances (40 CFR 302): None reportable.

SARA 311/312: None reportable.

SARA 313: None reportable.

15.2 US State Regulations

STATE RIGHT-TO-KNOW: To the best of our knowledge, this product contains no chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. (California Health and Safety Code Section 25249.6).

15.3 Canadian Regulations

DSL: All components of this product are listed on, or exempt from the DSL.

15.4 International Inventories*

United States: All components of this product are listed on the TSCA inventory.

Australia: All components of this product are listed on the AICS.

China: All components of this product are listed on the IECSC.

Japan: All components of this product listed on the ENCS.

Korea: All components of this product are listed on the ECL.

Philippines (PICCS): All components of this product are listed on the PICCS.

REACH: Listed as a registered substance.

*=Although a chemical may be listed on a country's inventory, it may not indicate a hazard or regulatory control for use.

SECTION 16: Other Information

16.1 HMIS AND NFPA RATINGS

HMIS Classification

Health: 0

Flammability: 1

Reactivity: 0

NFPA Ratings

Health: 0

Flammability: 1

Instability: 0

Special: None

16.2 EU CLP Relevant Phrase

Not classified

16.3 Preparation By

I.H. Department

16.4 Preparation Date

April 3, 2011

16.5 Last Revision Date

May 22, 2020 – Sections 1 and 15

16.6 Disclaimer/Statement of Liability

The data in this Safety Data Sheet is offered for your consideration, investigation and verification. The data is presented in good faith and was obtained from sources Carpenter believes to be reliable. Carpenter, however, makes no representation as to the completeness or accuracy. Carpenter makes no warranty, express or implied, with respect to the data contained herein. Carpenter cannot anticipate all conditions under which this data and the product may be used. The conditions of handling, storage, use, and disposal of the product are beyond Carpenter's control. Thus, we expressly disclaim responsibility or liability for any loss, damage or expense arising out of reliance on the information contained herein. You are advised to make your own determination as to safety, suitability and appropriate manner of handling, storage, use and disposal.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : PROPYLENE GLYCOL USP/EP
Synonyms : Propylene Glycol, 1,2-Propanediol, 1,2-Dihydroxypropane, Monopropylene Glycol
Substance name : 1,2-Propanediol
Substance No. : 200-338-0 (EINECS)
Chemical characterization : Glycols

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Solvent; Intermediate; Functional Fluids
Prohibited uses : Active pharmaceutical ingredient (API); Tobacco; Electronic cigarettes (E-cigarettes); Cannabis; Theater fogs; Artificial smoke; Cat food; Sprinkler systems over 30%

1.3 Details of the supplier of the safety data sheet

Company	Registration number	Telephone
E-mail address :		
Responsible/issuing person		

1.4 Emergency telephone number

Poison Center:
National Poisons Information Service
UK: +44 131 242 1383
24 hours all days

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : 1,2-Propanediol
EC-No. : 200-338-0 (EINECS)

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Propylene Glycol	57-55-6 200-338-0	>= 99.5

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : May cause irritation of the eyes, skin and mucous membranes.
Always observe self-protection methods
Move out of dangerous area.
Remove contaminated shoes and clothing.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Remove to fresh air.
In the case of inhalation of aerosol/mist consult a physician if necessary.
Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Avoid inhalation of hot vapors or extremely high concentrations of aerosols.

In case of skin contact : Wash skin thoroughly with mild soap and water.

In case of eye contact : Flush eyes with water thoroughly and continuously for 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).

Risks : May cause eye, skin, and respiratory tract irritation.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.

Unsuitable extinguishing media : Do not use solid water stream.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Although water soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer/public waters.

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment. Clean-up to be performed only by trained and properly equipped personnel.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version	Revision Date:	SDS Number:	Date of last issue: 11/05/2021
1.9	01/16/2023	BE129	Date of first issue: 11/29/2010

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Extinguish ignition sources; stop release; prevent flow to sewers or public waters.
Notify fire and environmental authorities.
Impound/recover large land spill; soak up small spill with inert solids.
Soak up small spills with inert solids.
Use suitable disposal containers.
On water, material is soluble and may float or sink.
Contain/collect rapidly to minimize dispersion.
Disperse residue to reduce aquatic harm.
Report per regulatory requirements.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Handle empty containers with care - residue can burn if heated.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Handle empty containers with care - residue may be combustible. Empty containers should be thoroughly rinsed with copious amounts of clean water. The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.

Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : See Section 1.2.
Development of Exposure Scenarios for such use are not required by the REACH Regulation other than what is provided in other sections of this SDS.

No use-specific Risk Management Measures are proposed.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Propylene Glycol	57-55-6	STEL (particulate)	30 mg/m ³	WEL (GB)
		TWA (particulate)	10 mg/m ³	WEL (GB)
		STEL (total vapour and particulates)	450 ppm 1,422 mg/m ³	WEL (GB)
		TWA (total vapour and particulates)	150 ppm 474 mg/m ³	WEL (GB)

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
1,2-Propanediol	Workers	Inhalation	Long term	168 mg/m ³
	Remarks: Systemic effects			
	Workers	Inhalation	Long term	10 mg/m ³
Remarks: Local effects				
	General Population	Inhalation		50 mg/m ³
Remarks: Systemic effects				
	General Population	Inhalation		10 mg/m ³
Remarks: Local effects				

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
1,2-Propanediol	Fresh water	260 mg/l
	Remarks: Assessment factor - 50	
	Sea water	26 mg/l
Remarks: Assessment factor - 500		
	Water	183 mg/l
Remarks: Intermittent Releases, Assessment factor -100		
	Fresh water sediment	572 mg/kg dw
	Sea sediment	57.2 mg/kg dw

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

	Soil	50 mg/kg dw
	Sewage Treatment Plant	20000 mg/l
	Remarks:Assessment factor -1	

8.2 Exposure controls

Engineering measures

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal protective equipment

- Eye protection : Use splash goggles when eye contact due to splashing or spraying liquid is possible.
- Hand protection
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
- Remarks : Not normally considered a skin hazard.
- Skin and body protection : No special clothing/skin protection equipment is recommended under normal conditions of anticipated use.
Where use can result in skin contact, practice good personal hygiene.
- Respiratory protection : No special respiratory protection equipment is recommended under anticipated conditions of normal use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : liquid (20 °C, 1,013.25 hPa)
- Color : clear
- Odor : Little or no odor.
- Odor Threshold : No value available.
- pH : no data available
- Melting point/range : < -20 °C
- Boiling point/boiling range : 184 °C (1003.20 hPa)
- Flash point : 104 °C(1000.010 hPa)
- Flammability (solid, gas) : Not applicable
- Upper explosion limit / Upper flammability limit : ~ 17.4 vol%
- Lower explosion limit / Lower flammability limit : ~ 2.4 vol%

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version	Revision Date:	SDS Number:	Date of last issue: 11/05/2021
1.9	01/16/2023	BE129	Date of first issue: 11/29/2010

Vapor pressure	:	0.2 hPa (25 °C)
Relative vapor density	:	no data available
Density	:	1.03 g/cm ³ (20 °C)
Solubility(ies)	:	
Water solubility	:	completely soluble (20 °C) pH: 7.1 - 7.8
Partition coefficient: n-octanol/water	:	log Pow: -1.07 (20.5 °C) pH: 6.2 - 6.4
Decomposition temperature	:	Incomplete combustion may produce carbon monoxide and other toxic gases.
Viscosity	:	
Viscosity, kinematic	:	42.1 mm ² /s (25 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension	:	71.6 mN/m, 1.01 g/l, 21.5 °C
Self-ignition	:	> 400 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Not expected to occur. This material is stable when properly handled and stored.
---------------------	---	--

10.4 Conditions to avoid

Conditions to avoid	:	High temperatures, oxidizing conditions. May degrade when exposed to light or other radiation sources.
---------------------	---	---

10.5 Incompatible materials

Materials to avoid	:	Reacts with strong oxidizing agents. Strong acids. Isocyanates.
--------------------	---	---

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

10.6 Hazardous decomposition products

Combustion may produce oxides of carbon and other toxic gases.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Propylene Glycol:

Acute oral toxicity : LD50 Oral (Rat): 22,000 mg/kg

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Remarks : Based on skin irritation values, not classified.
May cause slight transient skin irritation.

Components:

Propylene Glycol:

Assessment : Non-irritating to the skin.

Serious eye damage/eye irritation

Product:

Remarks : May produce minimal, fully reversible eye irritation.

Components:

Propylene Glycol:

Assessment : Non-irritating to the eyes.

Respiratory or skin sensitization

Product:

Test Type : Respiratory sensitization
Remarks : no data available

Test Type : Skin sensitization
Remarks : Skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version
1.9

Revision Date:
01/16/2023

SDS Number:
BE129

Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Components:

Propylene Glycol:

Assessment : Not sensitizing

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment : No adverse effect observed.

Components:

Propylene Glycol:

Germ cell mutagenicity- Assessment : Negative for genotoxicity using both in vitro and in vivo tests.

Carcinogenicity

Product:

Carcinogenicity - Assessment : No adverse effect observed.

Components:

Propylene Glycol:

Carcinogenicity - Assessment : No increase in tumors was noted in rats and dogs exposed to high concentrations of propylene glycol via the diet for up to 2 years. The incidence of skin tumors was unaltered in mice following dermal application over a lifetime.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No adverse effect observed.
No adverse effect observed.

Components:

Propylene Glycol:

Reproductive toxicity - Assessment : No adverse effect on reproductive performance was seen in male and female mice exposed continuously to high doses of propylene glycol in drinking water for up to 3 months. Results from studies in pregnant rats, mice, hamsters and rabbits demonstrate that propylene glycol is not teratogenic or fetotoxic.

STOT-single exposure

Product:

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Assessment : Based on single exposure toxicity values, not classified.

Components:

Propylene Glycol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

Product:

Assessment : Based on repeated exposure toxicity values, not classified., Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity.

Components:

Propylene Glycol:

Assessment : Long-term studies in rodents conducted with high oral doses found no evidence of adverse effects. Ingestion by cats, however, results in species-specific hematological changes.

Repeated dose toxicity

Components:

Propylene Glycol:

Species : Rat, male
NOAEL : 1,700 mg/kg
Application Route : Oral
Remarks : Long-term studies in rodents conducted with high oral doses found no evidence of adverse effects. Ingestion by cats, however, results in species-specific hematological changes.

Species : Rat
LOAEL : 0.16 mg/l
Application Route : Inhalation
Remarks : High aerosol concentrations inhaled by rats caused minor nasal and ocular signs that may have been due to mild irritation or drying effects on mucous membranes.

Further information

Product:

Remarks : no data available

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Components:

Propylene Glycol:

Remarks : Propylene glycol is of low acute toxicity after ingestion or skin contact. It is not a skin irritant, although repeated contact with undiluted product may dry the skin resulting in cracking and/or fissuring. It is not a skin sensitizer, however skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application. Neat liquid may also produce minimal, fully reversible eye irritation. Propylene glycol is of low inherent toxicity in rats and dogs after repeated oral exposure, while cats show species-specific hematological changes in red blood cells (other tissues unremarkable). Rats exposed repeatedly to high aerosol concentrations exhibited signs consistent with irritation of the eyes and nasal mucosa but showed no evidence of systemic toxicity. Results from studies in pregnant rats, mice, hamsters and rabbits demonstrate that propylene glycol is not a teratogen while no adverse effect on reproductive performance was apparent in male and female mice exposed continuously to high doses of propylene glycol in drinking water for up to 3 months. It is not genotoxic in vitro or in vivo. There was no increase in tumors in rats or dogs exposed to high concentrations of propylene glycol via the diet for up to 2 years, while the incidence of skin tumors was unaltered in mice following dermal application over a lifetime.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Based on acute aquatic toxicity values, not classified.
Chronic aquatic toxicity : Not classified, based on readily biodegradability and low acute toxicity.

Components:

Propylene Glycol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 HOURS
Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia): 18,340 mg/l
Exposure time: 48 HOURS
EC50 (Americamysis bahia (Mysid shrimp)): 18,800 mg/l
Exposure time: 96 HOURS
Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapita (formerly Selenastrum

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

plants capricornutum): 19,000 mg/l
Exposure time: 96 HOURS

EC50 (Skeletonema costatum): 19,100 mg/l
Exposure time: 96 HOURS

Toxicity to microorganisms : NOEC (Pseudomonas putida): 20,000 mg/l
Exposure time: 18 HOURS

Toxicity to fish (Chronic toxicity) : Remarks: Not expected to exhibit chronic toxicity to fish.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
Exposure time: 7 DAY
Species: Ceriodaphnia dubia

12.2 Persistence and degradability

Components:

Propylene Glycol:

Biodegradability : Result: Biodegradable
Biodegradation: 72 - 100 %

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: This material is not expected to bioaccumulate.

Components:

Propylene Glycol:

Bioaccumulation : Bioconcentration factor (BCF): 0.09
Remarks: This material is not expected to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -1.07 (20.5 °C)

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Stability in soil
Remarks: Low potential for soil adsorption expected

Components:

Propylene Glycol:

Distribution among environmental compartments : Remarks: Environmental releases of propylene glycol will tend to partition to water and soil, with little potential for evaporation.

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Not applicable.

Components:

Propylene Glycol:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.6 Other adverse effects

Product:

Environmental fate and pathways : No additional information available.

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Propylene Glycol:

Environmental fate and pathways : This material is not expected to persist in the environment and should pose little if any physical or toxicological hazards.

Additional ecological information : This material is expected to be non-hazardous to aquatic species.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.
Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

SECTION 14: Transport information

14.1 UN number

Not regulated for transport

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

14.2 UN proper shipping name

Not regulated for transport

14.3 Transport hazard class(es)

Not regulated for transport

14.4 Packing group

Not regulated for transport

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

No special precautions required.

14.7 Maritime transport in bulk according to IMO instruments

Description of the goods	PROPYLENE GLYCOL
Pollution category	OS
Ship type	NONE

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

Country/Region	Inventory	Status Description
Australia	AICS	Listed
Canada	DSL	Listed
China	IECSC	Listed
Europe	REACH	See Compliance Statement*
Japan	ENCS	Listed
Korea	K REACH	Pre-registration period *
New Zealand	NZIoC	Listed
Philippines	PICCS	Listed
United Kingdom	UK REACH	See Compliance Statement*
United States of America	TSCA	Listed

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version 1.9 Revision Date: 01/16/2023 SDS Number: BE129 Date of last issue: 11/05/2021
Date of first issue: 11/29/2010

Taiwan	TCSCA	Listed
Turkey	KKDIK	Pre-registration period *

* If the product has been purchased domestically from the notifying/registering legal entity of the LyondellBasell group of companies. We confirm that all substances (in this preparation) have been registered in accordance with the deadlines set forth in the applicable regulation. During the "Pre-registration period", we confirm that all substances in this preparation have been pre-registered or, where required under the regulation, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in the regulation. For more information, please contact reach@lyondellbasell.com.

† For more information on the status of this material, please contact chemical control at global.chemical.control@lyondellbasell.com.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

WEL (GB) : United Kingdom (GB)
WEL (GB) / TWA : TWA
WEL (GB) / STEL : STEL

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous

SAFETY DATA SHEET

PROPYLENE GLYCOL USP/EP, BULK

Version	Revision Date:	SDS Number:	Date of last issue: 11/05/2021
1.9	01/16/2023	BE129	Date of first issue: 11/29/2010

Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

UK / EN

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

SECTION 1. IDENTIFICATION

Product name : DIETHYLENE GLYCOL (IVL)

Manufacturer or supplier's details

Company name of supplier : Indorama Ventures Oxides LLC
Address : 24 Waterway Ave., Suite 1100, The Woodlands, Texas 77380
United States of America (USA)
Telephone : (256) 3405200

E-mail address of person responsible for the SDS : oxide.sds.global@indorama.net
Emergency telephone number : CHEMTREC – United States (English)
Local (City) Northern Virginia: +1 703-741-5970

Recommended use of the chemical and restrictions on use

Recommended use : Component of a Polyurethane System.
Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H302 Harmful if swallowed.

Precautionary Statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-oxydiethanol	111-46-6	>= 90 - <= 100

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : Wash with water and soap as a precaution.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
No action shall be taken involving any personal risk or without suitable training.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire
- Hazardous combustion products : Carbon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid formation of respirable particles. Do not breathe vapours or spray mist. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Keep in properly labelled containers.
- Materials to avoid : For incompatible materials please refer to Section 10 of this SDS.
- Further information on storage stability : Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,2'-oxydiethanol	111-46-6	TWA	10 mg/m3	US WEEL

Personal protective equipment

- Respiratory protection : Wear respiratory protection when its use is identified for certain contributing scenario.
- Hand protection

- Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

Eye protection : Tightly fitting safety goggles
Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Color : colourless, Clear
Odor : sweet
pH : 7
Melting point : 20.3 °F / -6.5 °C
Boiling point/boiling range : 472.8 °F / 244.9 °C
(1,013 hPa)
Flash point : 280 °F / 138 °C
Method: closed cup
Upper explosion limit / Upper flammability limit : 12.3 %(V)
Lower explosion limit / Lower flammability limit : 2 %(V)
Vapor pressure : 0.002666 hPa (68 °F / 20 °C)
ca. 0.77 hPa (176 °F / 80 °C)
Relative vapor density : 3.65
Relative density : 1.118
Density : 1.18 g/cm³ (68 °F / 20 °C)
Solubility(ies)
Water solubility : 1,000 g/l soluble (68 °F / 20 °C)
Solubility in other solvents : Solvent: Methanol
Description: soluble
Partition coefficient: n-octanol/water : log Pow: -1.98
GLP: no
Autoignition temperature : 702 °F / 372 °C
Viscosity
Viscosity, dynamic : 30 mPa.s (77 °F / 25 °C)

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

Oxidizing properties : The substance or mixture is not classified as oxidizing.
Molecular weight : 106.14 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No hazards to be specially mentioned.
Conditions to avoid : None known.
Incompatible materials : None known.
Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Aldehydes
Ketones
Burning produces noxious and toxic fumes.
No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 502.51 mg/kg
Method: Calculation method

Components:

2,2'-oxydiethanol:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation

Components:

2,2'-oxydiethanol:

Species : Human
Result : Mild skin irritant
Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Components:

2,2'-oxydiethanol:

Species : Rabbit
Result : No eye irritation
Exposure time : 24 h

DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

Respiratory or skin sensitization
Components:
2,2'-oxydiethanol:

Routes of exposure	:	Skin
Species	:	Guinea pig
Method	:	Directive 67/548/EEC, Annex V, B.6.
Result	:	Does not cause skin sensitisation.

Germ cell mutagenicity
Components:
2,2'-oxydiethanol:

Genotoxicity in vivo	:	Cell type: Somatic
		Application Route: Intraperitoneal injection
		Dose: 500 - 2000 mg/kg
		Method: OECD Test Guideline 474
		Result: negative

Carcinogenicity
Components:
2,2'-oxydiethanol:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	24 month(s)
Dose	:	25000 mg/l
Result	:	negative

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	24 month(s)
Dose	:	40000 mg/l
Result	:	negative

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	108 weeks
Dose	:	1160 - 1210 mg/kg
Frequency of Treatment	:	7 daily
Result	:	negative

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

Reproductive toxicity**Components:****2,2'-oxydiethanol:**

Effects on fertility : Species: Mouse, male and female
Application Route: Oral
Dose: 3060 milligram per kilogram

Effects on fetal development : Species: Rabbit
Application Route: Oral
Dose: 1000 milligram per kilogram
Method: OECD Test Guideline 414
Result: No teratogenic effects

STOT-single exposure**Components:****2,2'-oxydiethanol:**

Target Organs : Central nervous system, Kidney
Remarks : Not classified due to data which are conclusive although insufficient for classification.

STOT-repeated exposure**Components:****2,2'-oxydiethanol:**

Routes of exposure : Ingestion
Target Organs : Kidney, Liver, Central nervous system
Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure., May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:****2,2'-oxydiethanol:**

Species : Rat, male and female
NOAEL : 100 mg/kg
Application Route : Ingestion
Exposure time : 5,400 h
Number of exposures : 7 d/w

Species : Rat, male and female
NOEL : 150 mg/kg
Application Route : Ingestion
Exposure time : 672 h

Species : Dog, male
NOAEL : 8000 mg/kg
Application Route : Skin contact
Exposure time : 672 h
Number of exposures : 7 d

DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****2,2'-oxydiethanol:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 75,200 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Test substance: Fresh water
 Remarks: Toxic to aquatic organisms.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Test substance: Fresh water
 Method: DIN 38412

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 15,380 mg/l
 Exposure time: 17 d
 Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia (water flea)): 8,590 mg/l
 Exposure time: 7 d
 Test substance: Fresh water

Toxicity to microorganisms : IC50: > 1,000 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

Persistence and degradability**Components:****2,2'-oxydiethanol:**

Biodegradability : Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: >= 70 %
 Exposure time: 10 - 29 d

Bioaccumulative potential**Product:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
 Bioconcentration factor (BCF): 100
 Exposure time: 3 d

Components:**2,2'-oxydiethanol:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
 Bioconcentration factor (BCF): 100

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
Date of first issue: 12/27/2021

Print Date 05/04/2022

Exposure time: 3 d
Test substance: Fresh water
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: -1.98 (77 °F / 25 °C)

Mobility in soil

Product:

Distribution among environmental compartments : Koc: 1

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as a dangerous good

DIETHYLENE GLYCOL (IVL)

Version 1.1 Revision Date: 02/16/2022 SDS Number: 400041019918 Date of last issue: 12/27/2021
 Date of first issue: 12/27/2021

Print Date 05/04/2022

SECTION 15. REGULATORY INFORMATION**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ethane-1,2-diol	107-21-1	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

2,2'-oxydiethanol	111-46-6	>= 90 - <= 100 %
-------------------	----------	------------------

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations**Massachusetts Right To Know**

2,2'-oxydiethanol	111-46-6
-------------------	----------

Pennsylvania Right To Know

2,2'-oxydiethanol	111-46-6
ethane-1,2-diol	107-21-1

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

ethane-1,2-diol	107-21-1
-----------------	----------

Washington Chemicals of High Concern

ethane-1,2-diol	107-21-1
-----------------	----------

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

California Prop. 65

WARNING: This product can expose you to chemicals including ethane-1,2-diol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

SAFETY DATA SHEET

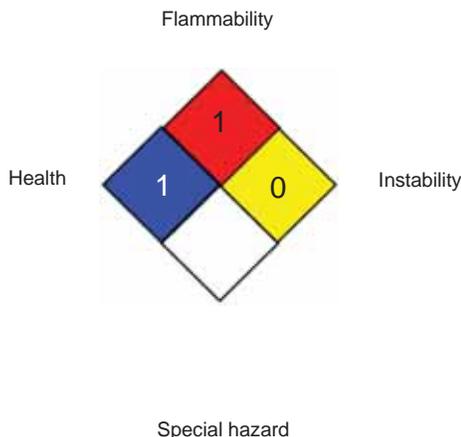


DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

NFPA 704:



HMIS® IV:

HEALTH	*	1
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
 US WEEL / TWA : 8-hr TWA

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

SAFETY DATA SHEET



DIETHYLENE GLYCOL (IVL)

Version	Revision Date:	SDS Number:	Date of last issue: 12/27/2021
1.1	02/16/2022	400041019918	Date of first issue: 12/27/2021

Print Date 05/04/2022

Revision Date : 02/16/2022

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : DIPROPYLENE GLYCOL FRAGRANCE
CAS Number: : 25265-71-8
Chemical characterization : Glycols
Chemical name : 1,1-Oxydi-2-Propanol
Synonyms : Dipropylene Glycol, DPG, 2,2-Dihydroxyisopropyl Ether,
Methyl-2(Methyl-2) Oxybispropanol

Identified uses : Monomer; Intermediate; Functional Fluids

Prohibited uses : Theater fogs; Artificial smoke

Company Address

Lyondell Chemical Company
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone

Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone number

CHEMTREC USA 800-424-9300
LYONDELL 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION**GHS Classification**

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Label elements

Not classified as hazardous according to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Other hazards

No additional information available.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substances****Components**

Chemical name	CAS-No. EC-No.	Weight %	Component Type
Dipropylene Glycol	25265-71-8	>= 99.5 %	A

Key:
(A) Substance

4. FIRST AID MEASURES

- General advice : May cause irritation of the eyes, skin and mucous membranes. Always observe self-protection methods. Move out of dangerous area. Remove contaminated shoes and clothing. Show this material safety data sheet to the doctor in attendance.
- If inhaled : Not expected to present a significant inhalation hazard under anticipated conditions of normal use. Avoid inhalation of hot vapors or extremely high concentrations of aerosols.

Remove to fresh air. In the case of inhalation of aerosol/mist consult a physician if necessary.
- In case of skin contact : Wash skin thoroughly with mild soap and water.
- In case of eye contact : Flush eyes with water thoroughly and continuously for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

Notes to physician

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

Symptoms	: High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
Hazards	: This product is of low acute toxicity. May cause irritation of the eyes, skin and mucous membranes. Hot vapors may cause lung damage.
Treatment	: Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.
Unsuitable extinguishing media	: Do not use solid water stream.
Specific hazards during fire fighting	: Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Burning liquid may float on water. Although water soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer/public waters.
Special protective equipment for fire-fighters	: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Clean-up to be performed only by trained and properly equipped personnel.
- Environmental precautions : Try to prevent the material from entering drains or water courses.
- Methods for containment /
Methods for cleaning up : Extinguish all ignition sources.
Stop release; prevent flow to sewers/public waters.
Notify fire and environmental authorities.
Impound/recover large land spill; soak up small spill with inert solids.
Soak up small spills with inert solids.
Use suitable disposal containers.
On water, material is soluble and may float or sink.
Contain/collect rapidly to minimize dispersion.
Disperse residue to reduce aquatic harm.
Report per regulatory requirements.

7. Handling and storage**Precautions for safe handling**

- Advice on safe handling : Handle empty containers with care - residue can burn if heated.
Empty containers should be thoroughly rinsed with copious amounts of clean water.
The rinse water can be used for makeup water for any necessary dilution of the concentrated product before use, or it can be properly discarded.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Fire-fighting class : OSHA/NFPA Class IIIB combustible liquid.

Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep container tightly closed when not in use.
Protect from moisture.
Store away from heat.
Material can attack some forms of plastics.
Do not store together with oxidizing and self-igniting products.
- Advice on common storage : Carbon/Mild steel with suitable internal coating, or stainless steel

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

Other data : No decomposition if stored and applied as directed.

Specific end use(s)
: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Ingredients with workplace control parameters**

Consult local authorities for acceptable exposure limits.

Exposure controls**Engineering measures**

No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal protective equipment

- Respiratory protection : No special respiratory protection is recommended under anticipated conditions of normal use with adequate ventilation. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection : Not normally considered a skin hazard.
Use chemical resistant gloves appropriate to conditions of use.
Wear chemical resistant gloves such as:
Nitrile rubber
Latex
- Eye and face protection : Safety glasses with side-shields
Use splash goggles when eye contact due to splashing or spraying liquid is possible.
- Skin and body protection : No special clothing/skin protection equipment is recommended under normal conditions of anticipated use. Where use can result in skin contact, practice good personal hygiene.
- Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

hazards and/or potential hazards that may be encountered during use.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid at 20 °C
Color	: Clear, colorless.
Odor	: odorless
Odor Threshold	: Not applicable
Flash point	: 128 - 132 °C at 988.80 hPa (741.66 mm Hg)
Lower explosion limit	: No Data Available.
Upper explosion limit	: No Data Available.
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Autoignition temperature	: 332 °C at 989.60 - 1001.80 hPa
Molecular weight	: 134.17 g/mol
Decomposition temperature	: not determined
pH	: 7.4 (as aqueous solution)
Melting point/range	: < -20 °C
Boiling point/boiling range	: 227 °C at 983.60 hPa
Vapor pressure	: 0.013 hPa at 25 °C
Density	: 1.02 g/cm ³ at 20 °C

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

Water solubility	: Miscible in water.
Partition coefficient: n-octanol/water	: log Pow: -0.462 at 21.7 °C
Viscosity, kinematic	: 118 mm ² /s at 20 °C 32 mm ² /s at 40 °C
Relative vapor density	: ~ 4.6 (Air = 1.0 at 15 - 20°C/59 - 68°F)
Surface tension	: 71.4 mN/m 1.01 g/l at 22 °C
Explosive properties	: Not explosive
Other Information	: No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Not expected to occur. This material is stable when properly handled and stored.
Conditions to avoid	: High temperatures, oxidizing conditions.
Materials to avoid	: Strong acids Isocyanates. Strong oxidizing agents.
Hazardous decomposition products	: Carbon Monoxide and other toxic vapors.
Thermal decomposition	: Thermal decomposition may produce carbon monoxide and other toxic vapors.

11. TOXICOLOGICAL INFORMATION

Product Summary : The below given information is based on the assessment of the product including impurities.

Acute toxicity

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

- Acute oral toxicity** : Based on acute toxicity values, not classified.
Ingestion of high doses may cause discomfort and irritation of the gastrointestinal tract and CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
- : LD50 Oral: > 5,000 mg/kg
Species: Rat
- Acute inhalation toxicity** : Based on acute toxicity values, not classified.
- : LC50 (Inhl): > 2.34 mg/l
Exposure time: 4 HOURS
Species: Rat
- Acute dermal toxicity** : Based on acute toxicity values, not classified.
- : LD50 Dermal: > 5,000 mg/kg
Species: Rabbit
- Skin corrosion/irritation** : Based on skin irritation values, not classified.
May cause slight transient skin irritation.
- Serious eye damage/eye irritation** : Based on eye irritation values, not classified.
- Respiratory or skin sensitization** : Respiratory sensitization
Not classified
No study available.
- : Skin sensitization
Not classified
No adverse effect observed.
- Chronic toxicity**
- Carcinogenicity** : Not classified
No adverse effect observed.
- Germ cell mutagenicity** : Not classified
No adverse effect observed.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

Reproductive toxicity

- Effects on fertility /
Effects on or via lactation : Not classified
Male rats and female mice ingesting multi-gram quantities of dipropylene glycol for 90-days exhibited changes in testis and estrous cycle that appeared secondary to clinical- and systemic toxicity, debilitation and death. Data available on related homologues suggest it is unlikely to affect fertility or reproduction at lower exposures that do not cause morbidity or mortality.
- Effects on Development : Not classified
No adverse effect observed.
- Target Organ Systemic Toxicant - Single exposure** : Based on single exposure toxicity values, not classified.
- Target Organ Systemic Toxicant - Repeated exposure** : Based on repeated exposure toxicity values, not classified.
- Aspiration hazard** : Based on physico-chemical values or lack of human evidence, not classified.

12. Ecological information**Ecotoxicology Assessment**

- Short-term (acute) aquatic hazard** : Based on acute aquatic toxicity values, not classified.
- Long-term (chronic) aquatic hazard** : Not classified, based on readily biodegradability and low acute toxicity.
- Toxicity to fish** : Low acute toxicity to fish
Data for close chemical analog.
- Toxicity to daphnia and other aquatic invertebrates** : Low acute toxicity to aquatic invertebrates.
- Toxicity to algae** : Low toxicity to algae.
- Toxicity to bacteria** : Low toxicity to sewage microbes.
- Toxicity to fish (Chronic toxicity)** : QSAR (Quantitative structure-activity relationship) based calculation predicts low chronic toxicity.
- Toxicity to daphnia and other aquatic invertebrates** : QSAR (Quantitative structure-activity relationship) based calculation predicts low chronic toxicity.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

(Chronic toxicity)**Persistence and degradability**

- Biodegradability** : Rapidly degradable.
- : Biodegradation: 64.5 - 93.4 %
(After 28 days in a ready biodegradability test)
(freshwater)
- : Partially biodegradable.
- : Biodegradation: 17.3 - 23.6 %
(62 - 64 day ready biodegradability test)
(seawater)

- Stability in water**
Dipropylene Glycol : Not expected to hydrolyze readily.

- Stability in soil**
Dipropylene Glycol : Low potential for soil adsorption expected

Bioaccumulative potential

- Bioaccumulation** : This material is not expected to bioaccumulate.
- : Bioconcentration factor (BCF): 0.3 - 4.6
(QSAR calculated value)

Mobility in soil

- Distribution among environmental compartments** : Type: Stability in soil
no data available
- : Type: Stability in water
no data available

Other adverse effects

- Environmental fate and pathways** : No additional information available.

Other information

- Additional ecological information** : No additional information available.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

13. Disposal considerations**Waste treatment methods**

Product : Comply with federal, state, or local regulations for disposal. Landfill solids at permitted sites.
Burn concentrated liquids, diluting with clean, low viscosity fuel.
Avoid flameouts and assure that emissions comply with all applicable standards/regulations.
Dilute aqueous waste may biodegrade.
Assure effluent complies with applicable regulations.

14. TRANSPORT INFORMATION

Not regulated for transport

BLG (MARPOL Annex II)

Description of the goods : DIPROPYLENE GLYCOL
Pollution category : Z
Ship type : 3

15. REGULATORY INFORMATION**TSCA 12b**

No substances are subject to TSCA 12(b) export notification requirements.

Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

No SARA Hazards

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

This material does not contain listed substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm that would require warning under the California Proposition 65 State Drinking Water and Toxic Enforcement Act.

However, LyondellBasell has not tested for the presence of listed chemical substances.

This product contains no known chemicals regulated by New Jersey's Worker and Community Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

25265-71-8 Dipropylene Glycol

Other international regulations**Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

Contact product.safety@lyb.com for additional global inventory information.

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

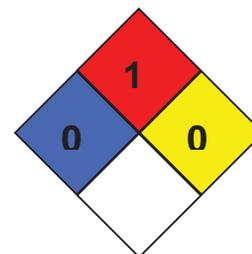
16. OTHER INFORMATION**Material safety datasheet sections which have been updated:**

Revised Section(s): 15 16

HMIS Classification : Health Hazard: 0
Flammability: 1
Physical hazards: 0



NFPA Classification : Health Hazard: 0
Fire Hazard: 1
Instability: 0

**Disclaimer**

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

In addition to any prohibitions of use specifically noted in this document, LyondellBasell may further prohibit or restrict the sale of its products into certain applications. For further information, please contact a LyondellBasell representative or visit the LyondellBasell website at: <https://www.lyondellbasell.com/en/products-technology/product-safety-stewardship/>
The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for

DIPROPYLENE GLYCOL FRAGRANCE

Gen. Variant: SDS_US_GHS

Version 1.2

Revision Date 11/22/2019

Print Date 02/09/2023

SDS No.: BE133

the original document written in English.

End of Material Safety Data Sheet



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: 2-Ethylhexyl Acrylate, 50 ppm MEHQ

Issue Date: 11/25/2022

Print Date: 02/04/2023

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: 2-Ethylhexyl Acrylate, 50 ppm MEHQ

Recommended use of the chemical and restrictions on use

Identified uses: Chemical intermediate.

Uses advised against: Unreacted monomer is not appropriate for use in cosmetic applications, such as artificial nail products.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids - Category 4

Skin irritation - Category 2

Skin sensitisation - Sub-category 1B

Specific target organ toxicity - single exposure - Category 3

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Combustible liquid.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements

Prevention

Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Avoid breathing mist or vapours.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.

Response

IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents and/or container to an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Ethyl hexyl acrylate

This product is a substance.

Substance name: Ethyl hexyl acrylate

CASRN: 103-11-7

Component	CASRN	Concentration
Ethyl hexyl acrylate	103-11-7	>= 99.6 - <= 100.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed:

Causes skin irritation. May cause an allergic skin reaction. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If burn is present, treat as any thermal burn, after decontamination. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. Due to irritant properties, swallowing may result in burns and/or ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal or esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Dry chemical. Dry sand.

Unsuitable extinguishing media: High volume water jet. Do not use direct water stream..

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides.

Unusual Fire and Explosion Hazards: Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire..

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Do not breathe vapours or spray mist. Avoid contact with eyes. Do not swallow. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Use with local exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition. This product contains inhibitor to stabilize it during shipment and storage. The effectiveness of the inhibitor is dependent on the presence of dissolved oxygen. In order to maintain sufficient dissolved oxygen in the liquid to avoid polymerization, the monomer must always be stored with a vapor space oxygen concentration of 5% to 21% (air). If the material is stored longer than six months (from date of manufacture) in a closed container, replenish the vapor space with fresh air to avoid depletion of the dissolved oxygen.

Storage stability

Shelf life: Use within 12 Month

Storage temperature: < 38 °C (< 100 °F)

Do not store with the following product types: Strong oxidizing agents. Explosives. Gases.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Ethyl hexyl acrylate	Dow IHG	TWA	3 ppm

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Examples of acceptable glove barrier materials include: Butyl rubber. Avoid gloves made of: Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body

reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Colorless
Odor	Sweet
Odor Threshold	No test data available
pH	No test data available
Melting point/range	Not applicable to liquids
Freezing point	-90 °C (-130 °F) <i>Literature</i>
Boiling point (760 mmHg)	216 °C (421 °F) <i>Literature</i>
Flash point	closed cup 82 °C (180 °F) <i>Literature</i>
Evaporation Rate (Butyl Acetate = 1)	0.3 <i>Literature</i>
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	0.7 % vol <i>Literature</i>
Upper explosion limit	8.2 % vol <i>Literature</i>
Vapor Pressure	0.12 mmHg at 20 °C (68 °F) <i>Literature</i>
Relative Vapor Density (air = 1)	6.4 <i>Literature</i>
Relative Density (water = 1)	0.885 <i>Literature</i>
Water solubility	0.1 g/L at 25 °C (77 °F) <i>Literature</i>
Partition coefficient: n-octanol/water	log Pow: 4.09 <i>Estimated.</i>
Auto-ignition temperature	252 °C (486 °F) <i>Literature</i>
Decomposition temperature	No data available
Dynamic Viscosity	1.54 cP at 25 °C (77 °F) <i>Literature</i>
Kinematic Viscosity	No test data available
Explosive properties	Not explosive
Oxidizing properties	No
Molecular weight	184.3 g/mol <i>Literature</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Excessive aging, heat, contamination with polymerization catalysts, oxygen-free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization. Excessive aging, heat, contamination with polymerization catalysts, oxygen-free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization.

Chemical stability: Unstable at elevated temperatures.

Possibility of hazardous reactions: Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Combustible liquid. Inhibitor is added to this product to prevent polymerization. However, this material can undergo hazardous polymerization. An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers. Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Inhibitor is added to this product to prevent polymerization. However, this material can undergo hazardous polymerization.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Do not blanket or purge with an inert gas to avoid depleting the oxygen concentration. Avoid direct sunlight or ultraviolet sources. Heat, flames and sparks.

Inhibitor: Methoxyphenol Inhibitor Concentration (ppm): 40 - 60
Phenothiazine Inhibitor Concentration (ppm): 0.4 - 1.6

Incompatible materials: Avoid contact with oxidizing materials.

Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure

Inhalation, Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute Toxicity Endpoints:

Not classified based on available information.

Acute oral toxicity

Information for the Product:

Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

Based on product testing:

LD50, Rat, male and female, 4,435 mg/kg OECD 401 or equivalent

Information for components:

Ethyl hexyl acrylate

LD50, Rat, male and female, 4,435 mg/kg OECD 401 or equivalent

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Based on product testing:

LD50, Rabbit, 7,522 mg/kg

Information for components:

Ethyl hexyl acrylate

LD50, Rabbit, 7,522 mg/kg

Acute inhalation toxicity

Information for the Product:

Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. Signs and symptoms of excessive exposure may include: May cause dizziness and drowsiness. Headache. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed.

LC50, Rat, male and female, 8 Hour, vapour, > 1.19 mg/l No deaths occurred following exposure to a saturated atmosphere.

Information for components:

Ethyl hexyl acrylate

LC50, Rat, male and female, 8 Hour, vapour, > 1.19 mg/l Other guidelines No deaths occurred following exposure to a saturated atmosphere.

Skin corrosion/irritation

Causes skin irritation.

Information for the Product:

Based on product testing:

Brief contact may cause severe skin irritation with pain and local redness.

Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Information for components:

Ethyl hexyl acrylate

Brief contact may cause severe skin irritation with pain and local redness.

Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Serious eye damage/eye irritation

Not classified based on available information.

Information for the Product:

Based on product testing:

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Information for components:

Ethyl hexyl acrylate

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

For skin sensitization:

May cause an allergic skin reaction.

For respiratory sensitization:

Not classified based on available information.

Information for the Product:

For skin sensitization:

Has caused allergic skin reactions in humans.

Has caused allergic skin reactions when tested in guinea pigs.

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Information for components:

Ethyl hexyl acrylate

For skin sensitization:

Has caused allergic skin reactions in humans.

Has caused allergic skin reactions when tested in guinea pigs.

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Information for the Product:

Product test data not available.

Information for components:

Ethyl hexyl acrylate

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory system

Aspiration Hazard

Not classified based on available information.

Information for the Product:

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Information for components:

Ethyl hexyl acrylate

Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified based on available information.

Information for the Product:

In animals, effects have been reported on the following organs:
Respiratory tract.

Information for components:

Ethyl hexyl acrylate

In animals, effects have been reported on the following organs:
Respiratory tract.

Carcinogenicity

Not classified based on available information.

Information for the Product:

Has caused tumors in skin painting tests in animals. Positive findings are believed to be secondary to chronic irritation/tissue injury.

Information for components:

Ethyl hexyl acrylate

Has caused tumors in skin painting tests in animals. Positive findings are believed to be secondary to chronic irritation/tissue injury.

Carcinogenicity

Component

Ethyl hexyl acrylate

List

IARC

Classification

Group 2B: Possibly carcinogenic to humans

Teratogenicity

Not classified based on available information.

Information for the Product:

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Information for components:

Ethyl hexyl acrylate

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive toxicity

Not classified based on available information.

Information for the Product:

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Information for components:

Ethyl hexyl acrylate

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

Not classified based on available information.

Information for the Product:

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Information for components:

Ethyl hexyl acrylate

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

General Information

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

Toxicity

Acute toxicity to fish

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 1.81 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1.3 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, *Desmodesmus subspicatus* (green algae), static test, 72 Hour, Growth rate inhibition, 1.71 mg/l, OECD Test Guideline 201 or Equivalent

Long-term (chronic) aquatic hazard

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), 21 d, number of offspring, 0.19 mg/l

Persistence and degradability

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 70 - 80 %

Exposure time: 15 d

10-day Window: Not applicable

Biodegradation: > 90 %

Exposure time: 14 d

Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 2.60 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	17 - 27 %
10 d	19 - 52 %
20 d	19 - 58 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals
Atmospheric half-life: 6.4 Hour
Method: Estimated.

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.09 Estimated.
Bioconcentration factor (BCF): 270 - 282 Fish Estimated.

Mobility in soil

Partition coefficient (Koc): 429 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. FOR UNUSED AND UNCONTAMINATED PRODUCT, always send to a licensed disposer per applicable regulations. Consult the local waste disposal expert for the appropriate waste disposal method. Recover or recycle, if possible. Otherwise, send it to a licensed disposer.

Contaminated packaging: Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s.(2-Ethyl hexyl acrylate)
UN number	NA 1993
Class	CBL
Packing group	III

Classification for SEA transport (IMO-IMDG):

	Not regulated for transport
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Skin corrosion or irritation
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
2-Ethylhexyl acrylate	103-11-7

California Prop. 65

WARNING: This product can expose you to chemicals including Ethyl hexyl acrylate, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA

Health	Flammability	Instability
2	2	2

Revision

Identification Number: 241035 / A001 / Issue Date: 11/25/2022 / Version: 9.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time weighted average

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown

above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US

BUTYL ACRYLATE**1. PRODUCT AND COMPANY IDENTIFICATION**

NO NUM:DIV IDENTIFIER MAINTAINED FOR THIS SPECIFICATION!

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Methacrylics

Customer Service Telephone Number: 1-800-338-1015
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: BUTYL ACRYLATE
Synonyms: BUTYL ACRYLATE
Molecular formula: C7H12O2
Chemical family: acrylates
Molecular weight: 128 g/mol
Product use: Intermediate

2. HAZARDS IDENTIFICATION**Emergency Overview**

Color: colourless
Physical state: liquid
Odor: like fruit

***Classification of the substance or mixture:**

Flammable liquid., Category 3, H226
Inhalation: Acute toxicity, Category 4, H332
Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319
Skin sensitisation, Category 1, H317
Specific target organ toxicity - single exposure, Category 3, H335
Chronic aquatic toxicity, Category 3, H412

*For the full text of the H-Statements mentioned in this Section, see Section 16.

BUTYL ACRYLATE

GHS-Labeling

Hazard pictograms:



Signal word:

Warning**Hazard statements:**

- H226 : Flammable liquid and vapour.
- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H332 : Harmful if inhaled.
- H335 : May cause respiratory irritation.
- H412 : Harmful to aquatic life with long lasting effects.

BUTYL ACRYLATE**Precautionary statements:****Prevention:**

P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 : Keep container tightly closed.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 : Use only non-sparking tools.
P243 : Take precautionary measures against static discharge.
P261 : Avoid breathing gas/mist/vapours/spray.
P264 : Wash skin thoroughly after handling.
P271 : Use only outdoors or in a well-ventilated area.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P280 : Wear protective gloves/ protective clothing/ eye protection/ face protection.
P273 : Avoid release to the environment.

Response:

P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 : Call a POISON CENTER/doctor if you feel unwell.
P321 : Specific treatment (see supplemental first aid instructions on this label).
P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 : If eye irritation persists: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.
P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 : Store in a well-ventilated place. Keep cool.
P405 : Store locked up.

Disposal:

P501 : Dispose of contents/ container to an approved waste disposal plant.

Supplemental information:**Potential Health Effects:**

If swallowed, may cause gastrointestinal irritation including nausea and vomiting. Vapor causes irritation to the respiratory tract and the eyes. Possible cross sensitization with other acrylates and methacrylates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

BUTYL ACRYLATE

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
2-Propenoic acid, butyl ester	141-32-2	>= 99 %	H226, H332, H315, H319, H317, H335, H412

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:

If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Dry chemical, Foam

Extinguishing media (unsuitable):

Water may be ineffective., Do not use a solid water stream as it may scatter and spread fire.

BUTYL ACRYLATE**Protective equipment:**

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Fight fire from a protected location.

Explosion hazard

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire fighting equipment should be thoroughly decontaminated after use.

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Hazardous organic compounds

A large amount of heat can be generated when monomers are exposed to a fire.

Heated sealed containers can explode.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:

Appropriate personal protective equipment is set forth in Section 8.

BUTYL ACRYLATE**7. HANDLING AND STORAGE****Handling****General information on handling:**

Avoid breathing vapor or mist.
Avoid contact with skin, eyes and clothing.
Keep away from heat, sparks and flames.
No smoking.
Keep container closed.
Use only with adequate ventilation.
Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.
Wash thoroughly after handling.
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
Container hazardous when empty.
Follow label warnings even after container is emptied.
RESIDUAL VAPORS MAY EXPLODE ON IGNITION.
DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.
Improper disposal or reuse of this container may be dangerous and/or illegal.
Emptied container retains vapor and product residue.

Storage**General information on storage conditions:**

Keep in a dry, cool place. Store in tightly closed container. Keep away from direct sunlight. Keep container closed when not in use. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

Storage stability – Remarks:

The typical shelf-life for this product is 12 months. The stability of this product should be checked periodically; typically every 90 days for bulk containers. Materials recommended for packaging include: stainless steel, aluminum, glass, HDPE, PP or PTFE. Recommended oxygen level is 5 to 8% by volume. Recommended inhibitor level is 10 to 20 ppm. Uninhibited monomer vapors can polymerize and plug relief devices.

Storage incompatibility – General:

Store away from sources of heat and light. Store separate from:

- Free radical generators
- Peroxides
- Strong oxidizing agents
- Amines
- Rust
- Anhydrides
- Aldehydes
- Azides

BUTYL ACRYLATE**Eye protection:**

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	colourless
Physical state:	liquid
Odor:	like fruit
Odor threshold:	0.3 ppb
Flash point	102 °F (39 °C) (closed cup)
Auto-ignition temperature:	559 °F (293 °C) (Method: Literature)
Lower flammable limit (LFL):	1.5 %(V) (Method: Literature)
Upper flammable limit (UFL):	9.9 %(V) (Method: Literature)
pH:	not determined
Density:	not determined
Specific Gravity (Relative density):	0.898 (68 °F (20 °C))
Vapor pressure:	0.40 mmHg (68 °F (20 °C))
Vapor density:	4.4 kg/m3 (Method: Literature)
Boiling point/boiling range:	297 °F (147 °C)
Melting point/range:	not determined
Freezing point:	-83 °F (-64 °C)
Evaporation rate:	No data available
Solubility in water:	2 g/l 77 °F (25 °C)
Viscosity, dynamic:	0.9 mPa.s 68 °F (20 °C)
Molecular weight:	128 g/mol
Oil/water partition	= 2.38

BUTYL ACRYLATE

coefficient:

Thermal decomposition: No data available

Flammability: See GHS Classification in Section 2

10. STABILITY AND REACTIVITY**Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization. See HANDLING AND STORAGE section of this SDS for specified conditions.

Hazardous reactions:

Hazardous polymerisation may occur.

Avoid freezing.

After freezing and thawing, hazardous polymerization can occur if thawed incorrectly.

Materials to avoid:

Free radical generators, Peroxides, Strong oxidizing agents

Amines

Rust

Anhydrides

Aldehydes

Strong bases.

Mercaptans

Halides

Azides

Ethers

Mineral acids

Conditions / hazards to avoid:

An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers or inadequately vented containers. This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :

Carbon oxides

Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or a similar material are summarized below.

Data for BUTYL ACRYLATE**Acute toxicity**

Oral:

BUTYL ACRYLATE

May be harmful if swallowed. (rat) LD50 = 3,143 - 9,050 mg/kg.

Dermal:

May be harmful in contact with skin. (rabbit) LD50 > 2,000 mg/kg.

Inhalation:

Harmful if inhaled. (rat) 4 h LC50 = 10.3 - 14.3 mg/l. (vapor)

Harmful if inhaled. (rat) 1 h LC50 = 23.04 - 33.3 mg/l. (vapor)

Skin Irritation:

Causes skin irritation. (rabbit) Irritation Index: 6.8/ 8.0. (15 min) (occluded exposure)

Causes skin irritation. (rabbit) Irritation Index: 6.5 / 8.0. (4 h)

Eye Irritation:

Causes serious eye irritation. (rabbit)

Skin Sensitization:

May cause allergic skin reaction. Guinea pig maximization test. Skin allergy was observed.

May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Produced an allergic reaction.

Repeated dose toxicity

Subchronic drinking water administration to rat / signs: changes in food or water consumption, decreased growth rate

Subchronic oral administration to rat / affected organ(s): liver / signs: increased organ weight

Subchronic inhalation administration to rat / affected organ(s): respiratory tract, eye / Local irritation

Carcinogenicity

Chronic inhalation administration to rat / No increase in tumor incidence was reported.

Chronic dermal administration to mouse / No increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

Assessment in Vivo:

No genetic changes were observed in laboratory tests using: hamster, rat

Developmental toxicity

Exposure during pregnancy. Inhalation (Rat) / No birth defects were observed. (levels produced toxic effects in the mothers and offspring)

BUTYL ACRYLATE

Exposure during pregnancy. Oral (Mouse) / Birth defects were observed. (levels produced toxic effects in the mothers and offspring)

Reproductive effects

Repeated exposure by inhalation (rat) / Did not cause damage to the reproductive organs.

Other information

Possible cross sensitization with other acrylates and methacrylates.

Human experience**Skin contact:**

Skin allergy was observed.

12. ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

Data on this material and/or a similar material are summarized below.

Data for BUTYL ACRYLATE**Stability in water:**

Half-life = 4 h (77 °F (25 °C) @pH 11 (Hydrolyses slowly.)

Half-life > 1,100 d (77 °F (25 °C) @pH 7 (Hydrolyses slowly.)

Half-life > 1,000 d (77 °F (25 °C) @pH 3 (Hydrolyses slowly.)

Biodegradation:

Readily biodegradable. (28 d) biodegradation > 80 %

Biological Oxygen Demand:

14 d BOD = 61% ThOD

28 d BOD = 57% ThOD

BOD/COD Ratio:

BOD/COD = 60 % (BOD5)

Bioaccumulation:

Slight potential to bioaccumulate.

Octanol Water Partition Coefficient:

log Pow = 2.38

Ecotoxicology

Data on this material and/or a similar material are summarized below.

Data for BUTYL ACRYLATE

BUTYL ACRYLATE**Aquatic toxicity data:**Toxic. *Cyprinodon variegatus* (sheepshead minnow) 96 h LC50 = 2.1 mg/lToxic. *Oncorhynchus mykiss* (rainbow trout) 96 h LC50 = 5.2 mg/l**Aquatic invertebrates:**Toxic. *Daphnia magna* (Water flea) 48 h EC50 = 8.2 mg/l**Algae:**Toxic. *Pseudokirchneriella subcapitata* (green algae) 96 h EC50 = 2.65 mg/lToxic. *Selenastrum capricornutum* 72 h EC50 = 5.9 mg/l**Microorganisms:**

Activated sludge 3 d EC0 (Respiration inhibition) > 150 mg/l

Chronic toxicity to aquatic invertebrates:*Daphnia magna* (Water flea) 21 d NOEC (reproduction) = 0.14 mg/l**13. DISPOSAL CONSIDERATIONS****Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION**US Department of Transportation (DOT)**

UN Number : 2348
Proper shipping name : Butyl acrylates, stabilized
Class : 3
Packaging group : III
Marine pollutant : no

International Maritime Dangerous Goods Code (IMDG)

UN Number : 2348
Proper shipping name : BUTYL ACRYLATES, STABILIZED
Class : 3
Packaging group : III
Marine pollutant : no
Flash point : 102 °F (39 °C) closed cup

15. REGULATORY INFORMATION

BUTYL ACRYLATE

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

<u>Chemical name</u>	<u>CAS-No.</u>	<u>SARA Reportable Quantities</u>	<u>SARA Threshold Planning Quantity</u>
1,4-Benzenediol	123-31-9	100 lbs	500 lbs 10000 lbs

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Fire Hazard, Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:

The following components are subject to reporting levels established by SARA Title III, Section 313:

<u>Chemical name</u>	<u>CAS-No.</u>	<u>De minimis concentration</u>	<u>Reportable threshold:</u>
2-Propenoic acid, butyl ester	141-32-2	1.0 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)



BUTYL ACRYLATE

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations**New Jersey Right to Know**

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

New Jersey Right to Know – Special Health Hazard Substance(s)

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

Pennsylvania Right to Know

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

<u>Chemical name</u>	<u>CAS-No.</u>
2-Propenoic acid, ethyl ester	140-88-5

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Chemical name</u>	<u>CAS-No.</u>
Benzene, methyl-	108-88-3

16. OTHER INFORMATION

BUTYL ACRYLATE

Full text of H-Statements referred to under sections 2 and 3.

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Miscellaneous:

Other information: Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.

Latest Revision(s):

Reference number: 200000034
Date of Revision: 01/21/2017
Date Printed: 01/22/2017

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, ARKEMA expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; **NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN.** The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (<http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html>) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : GLYCOL ETHER EB ACETATE
CAS Number: : 112-07-2
Chemical characterization : Glycol Ethers
Chemical name : 2-Butoxyethanol acetate
Synonyms : Ethylene Glycol Monobutyl Ether Acetate; Butyl glycol acetate (BGA); Ethylene glycol butyl ether acetate (EGBE)

Identified uses : Solvent

Company Address

Equistar Chemicals, LP
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone

Customer Service
888 777-0232
product.safety@lyb.com

Emergency telephone number

CHEMTREC USA 800-424-9300
EQUISTAR 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids	Category 4
Acute toxicity; Oral	Category 4
Short-term (acute) aquatic hazard	Category 3

Label elements**Hazard symbols** :**Signal word** : Warning**Hazard Statements** : H227 Combustible liquid.
H302 Harmful if swallowed.
H402 Harmful to aquatic life.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

Precautionary Statements**: Prevention**

- P210 Keep away from open flames/ hot surfaces. - No smoking.
 P264 Wash hands thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

- P370 + P378 In case of fire: Use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam.
 P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
 P330 Rinse mouth.

Storage

- P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substances**

Chemical nature : Substance

Components

Chemical name	CAS-No. EC-No.	Weight %	Component Type
2-butoxyethyl acetate	112-07-2	<=100.0 %	A
2-Butoxyethanol	111-76-2	0.1 - 1.0 %	C

Key:
 (A) Substance
 (C) Impurity

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

4. FIRST AID MEASURES

- General advice : Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.
- If inhaled : If symptoms are experienced, move victim to fresh air. Seek medical attention if discomfort persists.
- In case of skin contact : Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing, seek medical attention. Thoroughly clean contaminated clothing before reuse; discard contaminated leather goods (gloves, shoes, belts, wallets, etc.).
- In case of eye contact : Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

Notes to physician

- Symptoms : Inhalation may cause CNS symptoms like headache, dizziness, fatigue, muscular weakness, drowsiness and lack of coordination.
- Hazards : Harmful if swallowed, in contact with skin or if inhaled.
- Treatment : There is good evidence that ethylene glycol monobutyl ether acetate (EGBEA) is hydrolyzed by esterases to its parent glycol ether, ethylene glycol monobutyl ether (EGBE). In vitro results with human red blood suggest that humans are more resistant to the hemolytic effects of EGBE than laboratory test animals such as mice, rats, and rabbits. These results suggest that hemolysis and secondary effects observed in laboratory animals are unlikely to occur in humans except in extreme cases when exposure is severe and/or prolonged. Indicators for treatment and observation include metabolic acidosis, urinary excretion of 2-butoxy acetic acid (BAA), hemolysis, or

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

hematuria.

Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.
Provide oxygen and/or ventilation assistance, if needed.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam
LARGE FIRE: Use water spray, water fog or alcohol-resistant foam
- Specific hazards during fire fighting : Fine sprays/mists may be combustible at temperatures below normal flash point.
Avoid sparks, heat, and open flame.
Vapors can travel to a source of ignition and flash back.
Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers.
Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.
- Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide limited protection.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Use personal protective equipment.
Ensure adequate ventilation.
Eliminate all sources of ignition.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
- Methods for containment / : Contain spill with dike to prevent entry into sewers or

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

Methods for cleaning up

waterways.

For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spills, soak up with absorbent material and place in properly labeled containers for disposal.

All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

Additional advice

: Keep non-involved personnel away from the area of spillage. Treat recovered material as described in the section "Disposal considerations".

7. Handling and storage**Precautions for safe handling**

Advice on safe handling

: Containers, even those that have been emptied, will retain product residue and vapor and should be handled as if they were full. Do not eat, drink or smoke in areas where this material is used.

Fire-fighting class

: OSHA/NFPA Class IIIA Combustible Liquid.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

: Store containers in a cool, dry, ventilated, fire resistant area away from sources of ignition and incompatible materials. Keep container tightly closed and properly labeled.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Ingredients with workplace control parameters****Occupational Exposure Limits**

Components	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
------------	---------	------	-------------	------------------------	---------------------------

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

2-butoxyethyl acetate	112-07-2	TWA	20 ppm	US (ACGIH) 2012	
2-Butoxyethanol	111-76-2	TWA	20 ppm	US (ACGIH) 2012	
2-Butoxyethanol	111-76-2	IDLH	700 ppm	NIOSH September 2007	
2-Butoxyethanol	111-76-2	TWA	50 ppm 240 mg/m3	US (OSHA) June 23, 2006	

Consult local authorities for acceptable exposure limits.

Exposure controls**Engineering measures**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protective equipment

- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection : Wear chemical resistant gloves (EN374) such as:
Butyl rubber.
Neoprene.
- Eye and face protection : Wear safety glasses as minimum eye protection. Conditions may warrant the use of chemical goggles and possibly a face shield. Consult your standard operating procedure or safety professional for advice. Use protective eye and face devices that comply with ANSI Z87.1-1987.
- Skin and body protection : Appropriate protective clothing should be worn to prevent skin contact.
- Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.
Take off contaminated clothing and wash before reuse.
Wash clothing frequently.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: Colorless.
Odor	: fruity
Odor Threshold	: 0.01 - 0.48 ppm
Flash point	: 74 - 84 °C Method: Tag closed cup Method: ASTM D 56
Lower explosion limit	: 0.9 vol% (tested at 93.3°C/200°F, 1 atm).
Upper explosion limit	: 8.8 vol% (tested at 93.3°C/200°F, 1 atm).
Oxidizing properties	: No Data Available.
Decomposition temperature	: not determined
pH	: 3 - 5
Melting point/freezing point	: -63.5 °C
Boiling point/boiling range	: 192 °C at 1,013 hPa
Vapor pressure	: 0.026 hPa at 25 °C
Density	: 0.943 g/cm ³ at 20 °C (Water = 1)
Water solubility	: 15 g/l 20 °C
Partition coefficient: n-octanol/water	: log Pow: 1.51 at 25 °C
Viscosity, dynamic	: No Data Available.
Viscosity, kinematic	: 1.9 mm ² /s

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

	at 20 °C
	1.3 mm ² /s at 40 °C
Relative vapor density	: 5.5 (Air = 1.0)
Evaporation rate	: 0.03
Explosive properties	: No Data Available.
Other Information	: No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	: Will not occur.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Forms explosive peroxides on prolonged storage.
Materials to avoid	: Strong acids Strong oxidizing agents. Zinc and Zinc alloys
Hazardous decomposition products	: Not expected to decompose under normal conditions.
Thermal decomposition	: Incomplete combustion may produce carbon monoxide and other toxic gases.

11. TOXICOLOGICAL INFORMATION

Product Summary	: The below given information is based on the assessment of the product including impurities.
Acute toxicity	
Acute oral toxicity	: Classified Harmful if swallowed.
	: LD50: 1,600 mg/kg Species: Rat
Acute inhalation toxicity	: Based on acute toxicity values, not classified.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

- : Exposure to vapor may cause irritation of the eyes, nose, or throat.
- : LC0: > 400 ppm
Exposure time: 4 HOURS
Species: Rat
- Acute dermal toxicity** : Based on acute toxicity values, not classified.
- : LD50: > 2,000 mg/kg
Species: Guinea pig
- Skin corrosion/irritation** : Based on skin irritation values, not classified.
- Serious eye damage/eye irritation** : Based on eye irritation values, not classified.
- Respiratory or skin sensitization** : Respiratory sensitization
Not classified
No study available.
- : Skin sensitization
Not classified
No adverse effect observed.
- Chronic toxicity**
- Carcinogenicity : Not classified
Contains a substance that has a positive carcinogenicity study.
The weight of evidence for the carcinogenicity of this substance does not meet the criteria for classification.
- Germ cell mutagenicity : Not classified
No adverse effect observed.
- Reproductive toxicity**
- Effects on fertility / : Not classified
Effects on or via lactation : No adverse effect observed.
- Effects on Development : Not classified
No adverse effect observed.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

- Target Organ Systemic Toxicant - Single exposure** : Based on single exposure toxicity values, not classified.
- Target Organ Systemic Toxicant - Repeated exposure** : Based on repeated exposure toxicity values, not classified.
- : Results from acute and repeat exposure studies in rats, mice and rabbits indicate that EGBE causes injury to red blood cells with subsequent intravascular hemolysis and anemia, and secondary changes in the liver and kidney. Human and guinea pig red blood cells are resistant to EGBE injury and therefore the effects noted in sensitive species are not relevant to humans.
- Aspiration hazard** : Based on physico-chemical values or lack of human evidence, not classified.

12. Ecological information**Ecotoxicology Assessment**

- Short-term (acute) aquatic hazard** : Classified, Harmful to aquatic life.
- Long-term (chronic) aquatic hazard** : Not classified, based on readily biodegradability and low acute toxicity.
- Toxicity to fish** : Harmful to fish.
- : LC50: 22 mg/l
Exposure time: 96 HOURS
Species: Pimephales promelas (fathead minnow)
- Toxicity to daphnia and other aquatic invertebrates** : Harmful to aquatic invertebrates
- : LC50: 37 mg/l
Exposure time: 48 HOURS
Species: Daphnia magna.
Test type: Immobilization
- Toxicity to algae** : Low toxicity to algae.
- Toxicity to bacteria** : Low toxicity to sewage microbes.
- Toxicity to fish (Chronic toxicity)** : no data available
- Toxicity to daphnia and** : Low chronic toxicity to aquatic invertebrates.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

**other aquatic invertebrates
(Chronic toxicity)**

Persistence and degradability

Biodegradability : Biodegradation: 77 - 97 %
Rapidly degradable.
(After 28 days in a ready biodegradability test)

Bioaccumulative potential

Bioaccumulation : Bioconcentration factor (BCF): 4.61
Method: (QSAR calculated value)
This material is not expected to bioaccumulate.

Mobility in soil

**Distribution among
environmental
compartments** : Type: Stability in water
Slow hydrolysis of ester acetate group is expected

: Type: Stability in soil
no data available
Low absorption to soil particulates predicted

Other adverse effects

**Environmental fate and
pathways** : No additional information available.

Other information

**Additional ecological
information** : No additional information available.

13. Disposal considerations**Waste treatment methods**

Product : Contaminated product, soil, water, container residues and spill
cleanup materials may be hazardous wastes.
Comply with federal, state, or local regulations for disposal.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

14. TRANSPORT INFORMATION

This material does not sustain combustion and is classified as non-regulated material in the United States under the provisions of 49 CFR 173.120(b)(3).

Not regulated for transport

15. REGULATORY INFORMATION**TSCA 12b**

No substances are subject to TSCA 12(b) export notification requirements.

Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure)

SARA 313

This product contains the following chemicals subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372:

Component	CASRN	Reporting Threshold
2-butoxyethyl acetate	112-07-2	1.0%
2-Butoxyethanol	111-76-2	1.0%

State Reporting

This material does not contain listed substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm that would require warning under the California Proposition 65 State Drinking Water and Toxic Enforcement Act.

However, LyondellBasell has not tested for the presence of listed chemical substances.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

112-07-2 2-butoxyethyl acetate
111-76-2 2-Butoxyethanol

No components are subject to the Massachusetts Right to Know Act.

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

108-88-3 Toluene

Other international regulations**Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

Contact product.safety@lyb.com for additional global inventory information.

16. OTHER INFORMATION

Material safety datasheet sections which have been updated:

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

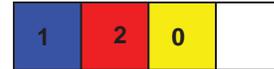
Print Date 10/09/2020

SDS No.: 3384

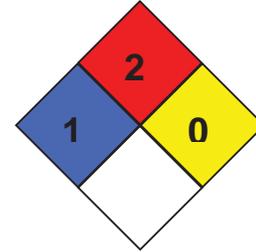
Material safety datasheet sections which have been updated:

Revised Section(s): 14

HMIS Classification : Health Hazard: 1
Flammability: 2
Physical hazards: 0



NFPA Classification : Health Hazard: 1
Fire Hazard: 2
Instability: 0

**Further information**

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)

NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

Disclaimer

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

In addition to any prohibitions of use specifically noted in this document, LyondellBasell may further prohibit or restrict the sale of its products into certain applications. For further information, please contact a LyondellBasell representative or visit the LyondellBasell website at: <https://www.lyondellbasell.com/en/products-technology/product-safety-stewardship/>
The Trade Name referenced in section 1 is a trademark owned or used by the LyondellBasell family of companies.

Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

GLYCOL ETHER EB ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 10/08/2020

Print Date 10/09/2020

SDS No.: 3384

End of Material Safety Data Sheet

Safety Data Sheet



Oronite

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

LUBAD 1903

Product Use: Lubricating oil additive

Company Identification

Chevron Oronite Company LLC
3901 Briarpark Dr.
Houston, TX 77042
United States of America

Transportation Emergency Response

Asia: Chevron Emergency Information Centre +(1) 510-231-0623
Australia: 1 800 009 010
China: (+86) 4001-204937
Europe: Oronite SA - Gonfreville Plant +33 2 35 25 55 00
North America: CHEMTREC (800) 424-9300 or (703) 527-3887
South America: Chevron Oronite Brasil Ltda (24 hours) 55 11 4478-1200

Health Emergency

USA: International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

SDS Requests: (+1) 877-512-7200
Technical Information: (+1) 877-512-7200

Oronite D-Tect®, OLOA®, OGA®, OFA®, ODA®, PARATONE®, and TFA® are registered trademarks of the Chevron Oronite Company LLC.

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION:

- Acute aquatic toxicant: Category 3.
- Chronic aquatic toxicant: Category 3.

Environmental Hazards:

- Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention:

- Avoid release to the environment.

Disposal:

- Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Heating may release highly toxic and flammable hydrogen sulfide (H₂S). Do not attempt rescue without supplied-air respiratory protection.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	35 - 40 %weight
Zinc alkyl dithiophosphate	68649-42-3	5 - 10 %weight
Arenesulfonic acid, alkyl derivatives, metal salts	Trade secret	1 - 5 %weight
Branched alkylphenol and Calcium branched alkylphenol	74499-35-7 & 132752-19-3	< 0.3 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H₂S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Repeated contact with the skin may cause irritation. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H₂S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H₂S, see Chevron SDS No. 301.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen, Phosphorus, Sulfur, Zinc, Calcium, Boron, Molybdenum, Magnesium.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: The recommended reheating medium is hot water or regulated low pressure steam. Care must be taken not to exceed the temperatures stated above when reheating this material in order to avoid decomposition that releases hazardous fumes. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: If adequate engineering controls are used, short term activities such as loading, unloading and in-line blending may occur at temperatures ranging from 80-85°C (176-185°F). During shipment by railcar or tank truck, loading temperatures as high as 80-85°C (176-185°F) may be used and are expected to drop to 66°C (150°F) or lower within 7 days. Storage temperatures for up to 2 weeks should not exceed 66°C (150°F). The recommended long-term (2 weeks or more) storage temperature is ambient to 45°C (113°F) maximum. Do not get in eyes, on skin, or on clothing. Do not breathe gas. Wash thoroughly after handling.

Unusual Handling Hazards: Toxic quantities of hydrogen sulfide (H₂S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H₂S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H₂S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H₂S, the concentration should be measured by the use of fixed or portable devices.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode

and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron SDS No. 301. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: No data available

Vapor Density (Air = 1): No data available

Initial Boiling Point: No data available

Solubility: Insoluble in water.

Freezing Point: No data available

Melting Point: No data available
Density: 0.9703 kg/l @ 15°C (59°F)
Viscosity: 1400 cSt @ 40°C (104°F)
Coefficient of Therm. Expansion / °F: 0.000360
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): Not Applicable

Flashpoint: (Pensky-Martens Closed Cup) 140 °C (284 °F) (Minimum)

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: No data available Upper: No data available

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions to Avoid: Do not exceed handling and storage temperatures listed in SDS Section 7 (Handling and Storage).

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: Hydrogen Sulfide (See Section 7), Alkyl Mercaptans (See Section 7)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on an evaluation of the data for similar products. These data show that a specific component present in this product antagonizes (or decreases the severity of) the eye irritation of the ZnDTP.

Skin Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains Arenesulfonic acid, alkyl derivatives, metal salts. This substance may cause skin sensitization, eye irritation, lung effects, skin corrosion. When using this substance, avoid skin contact, avoid ingestion, use skin protection. This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

Tetrapropenyl phenol (TPP), also known as dodecyl phenol, was tested in a rat oral gavage one-generation reproductive toxicity study (doses of 0, 5, 25, or 125 mg/kg/day) and a rat dietary two-generation reproductive toxicity study (doses of 0, 1.5, 15, or 75 mg/kg/day). Results from the one-generation study demonstrated reduced ovary weights and changes in male reproductive accessory organs (decreased organ weights, decreased secretions, and decreased epididymal sperm concentrations) at 25 mg/kg/day; 5 mg/kg/day was identified as the No Observed Adverse Effect Level (NOAEL). Results from the two-generation study demonstrated prolonged estrous cyclicity, reduced ovary weights, accelerated sexual maturation, decreased mean live litter size, decreased fertility rates, hypospermia, and reduced weights in male reproductive accessory organs at 75 mg/kg/day; 15 mg/kg/day was identified as the NOAEL.

Evaluation of these two primary studies of TPP (one- & two-generation reproductive toxicity studies), as well as supporting data from additional in-vivo & in-vitro studies of both TPP and substances containing TPP & TPP/calcium salts as an impurity resulted in a classification of TPP as a Category 1B under the criteria of the Globally Harmonized System and Regulation (EC) No 1907/2006 (presumed reproductive hazard to humans).

The studies were also evaluated to identify a valid & reliable specific concentration limit (SCL) for reproductive effects, below which reproductive toxicity would not be expected to occur. An SCL of 1.5 wt% TPP & TPP/calcium salts was derived based on the identified NOAEL from the rat dietary two-generation reproductive toxicity study, and confirmed by supporting studies of substances containing TPP as an impurity.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in

the aquatic environment.

The product has not been tested. The statement has been derived from the properties of the individual components.

This material contains one or more components that have a branched alkylphenol impurity that is highly toxic to aquatic organisms (disclosed in Section 3). The components containing the impurity have been tested and are not toxic to aquatic organisms. Therefore the data in Section 3 for the alkylphenol impurity should not be used to classify the product for aquatic toxicity.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: Not applicable

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)
03=EPCRA 313	08-2=TSCA 12(b)
04=CA Proposition 65	

The following components of this material are found on the regulatory lists indicated.

Zinc alkyl dithiophosphate	03, 06, 07
Arenesulfonic acid, alkyl derivatives, metal salts	08-2

U.S. Toxic Substances Control Act (TSCA): The product contains a chemical substance subject to a Consent Order or Significant New Use Rule (SNUR) per 40 CFR 721.11180.

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AIIIC (Australia), DSL (Canada), ENCS (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

One or more components has been notified but may not be listed in the following chemical inventories: IECSC (China). Separate notification may be required.

Please contact Oronite at SDS_REACH@chevron.com for more information concerning EU-REACH.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 02 - Hazards Otherwise Not Classified information was modified.

SECTION 03 - Composition information was modified.

SECTION 04 - First Aid - Eye information was modified.

SECTION 04 - First Aid - Inhalation information was modified.

SECTION 04 - First Aid - Note to Physicians information was added.

SECTION 04 - First Aid - Skin information was modified.

SECTION 04 - Immediate Health Effects - Eye information was modified.

SECTION 04 - Immediate Health Effects - Inhalation information was modified.

SECTION 04 - Immediate Health Effects - Skin information was modified.

SECTION 06 - Environmental Precautions information was modified.

SECTION 07 - Precautionary Measures information was modified.

SECTION 07 - Unusual Handling Hazards information was added.

SECTION 08 - Eye/Face Protection information was modified.

SECTION 08 - Respiratory Protection information was modified.

SECTION 08 - Skin Protection information was deleted.

SECTION 11 - Additional Toxicology Information information was modified.

SECTION 11 - Carcinogenicity information was added.

SECTION 11 - Germ Cell Mutagenicity information was added.

SECTION 11 - Reproductive Toxicity information was added.

SECTION 11 - Specific Target Organ Toxicity - Repeated Exposure information was added.

SECTION 11 - Specific Target Organ Toxicity - Single Exposure information was added.

SECTION 11 - Toxicological Information information was added.

SECTION 11 - Toxicological Information information was modified.

SECTION 12 - Ecological Information information was added.

SECTION 12 - Ecological Information information was deleted.

SECTION 15 - Chemical Inventories information was modified.

SECTION 15 - Regulatory Information information was added.

SECTION 15 - Regulatory Information information was deleted.

SECTION 15 - Regulatory Information information was modified.

SECTION 16 - NFPA Rating information was modified.

Revision Date: January 06, 2022

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Technical Center, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

1512-29
1515-44
1520-11
1525-11
1530-11
1535-11
1540-11
1545-11
1550-11
1555-11
1560-11
1565-11
1570-11
1575-11
1580-11
1585-11
1590-11
1595-11
1600-11

Section 1. Identification

GHS product identifier : YUBASE 6
Product code : Not available.
Chemical name : Distillates (petroleum), hydrotreated heavy paraffinic
Other means of identification : Baseoil - unspecified; Distillates, petroleum, hydrotreated heavy paraffinic; Mineral oil, petroleum distillates, hydrotreated heavy paraffinic; Distillates (petroleum), hydro-treated heavy paraffinic; Paraffin oil; HYDROTREATED HEAVY PARAFFINIC DISTILLATE; DISTILLATES (PETROLEUM) HYDROFVLD
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Manufacture of lubricants.

Supplier's details : SK Lubricants Co., Ltd.
 26, Jong-ro, Jongno-gu, Seoul, Korea Telephone: +82-2-2121-5114
 INTL Telephone: 1-800-424-9300 (CHEMTREC)

Emergency telephone number (with hours of operation) : +82-52-208-2114 - Hours of operation: 9:00-18:00

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture Chemical : Substance

Other means of identification : Distillates (petroleum), hydrotreated heavy paraffinic
 Baseoil - unspecified; Distillates, petroleum, hydrotreated heavy paraffinic; Mineral oil, petroleum distillates, hydrotreated heavy paraffinic; Distillates (petroleum), hydro-treated heavy paraffinic; Paraffin oil; HYDROTREATED HEAVY PARAFFINIC DISTILLATE; DISTILLATES (PETROLEUM) HYDROFVLD

UNAS number/other identifiers

Section 3. Composition/information on ingredients

CAS number : 64742-54-7

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	100	64742-54-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : No specific data.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	ACGIH TLV (United States, 3/2017). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2016). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Clear. Colorless.
- Odor** : Mineral oil. [Slight]
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.

Section 9. Physical and chemical properties

Flash point	: Closed cup: $\geq 220^{\circ}\text{C}$ ($\geq 428^{\circ}\text{F}$)
Vaporization rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: ≤ 0.01 kPa (≤ 0.075006 mm Hg) [room temperature]
Vapor density	: ≥ 5 [Air = 1]
Relative density	: 0.842 [Water = 1]
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: 3.9 to 6
Auto-ignition temperature	: 260 to 371°C (500 to 699.8°F)
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): 0.36 cm^2/s (36 cSt)
Flow time (ISO 2431)	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	LC50 Inhalation Dusts and mists	Rat	> 5.53 mg/l	4 hours
	LD50 Dermal	Rabbit	> 5000 mg/kg	-
	LD50 Oral	Rat	> 5000 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Section 11. Toxicological information

Conclusion/Summary : The DMSO extract by IP 346 of this substance is less than 3% (typical 0.2% with maximum 0.5%).
Consequently it is not classified as a carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Section 11. Toxicological information

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated heavy paraffinic	Acute EC50 >100 mg/l	Daphnia	48 hours
	Acute IC50 >100 mg/l	Algae	72 hours
	Acute LC50 >100 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy paraffinic	-	-	Inherent

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Distillates (petroleum), hydrotreated heavy paraffinic	3.9 to 6	-	high

Stability in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-

Section 14. Transport information

Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : Listed.

New Jersey : Listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Listed
Canada	: Listed
China	: Listed
Europe	: Listed
Japan	: Japan inventory (ENCS): Listed
Malaysia	: Listed
New Zealand	: Listed
Philippines	: Listed
Republic of Korea	: Listed
Taiwan	: Listed
Turkey	: Listed
United States	: Listed

Section 16. Other information

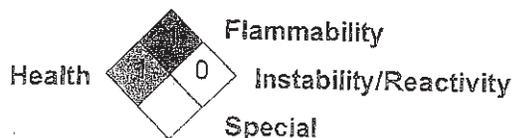
Hazardous Material Information System (U.S.A.)

Health	/	0
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
Not classified.	

History

Date of printing	: 1/1/2020
Date of issue/Date of revision	: 1/1/2020
Date of previous issue	: No previous validation
Version	: 1.01
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	: CONCAWE, ECHA

✓ indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

3a Self Data 3yeet



Oronite

3hECLN1 ORLDPEC AND EL MOANY DhNCFEACL N

L UL A BB190

Product Pse: Lubricating oil additive

Companf Identification

Chevron Oronite Company LLC
3901 Briarpark Dr.
Houston, TX 77042
United States of America

Transportation hmergencf Response

Asia: Chevron Emergency Information Centre +(1) 510-231-0623
Australia: 1 800 009 010
China: (+86) 4001-204937
Europe: Oronite SA - Gonfreville Plant +33 2 35 25 55 00
North America: CHEMTREC (800) 424-9300 or (703) 527-3887
South America: Chevron Oronite Brasil Ltda (24 hours) 55 11 4478-1200

Healty hmergencf

USA: International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

SDS Requests: (+1) 877-512-7200
Technical Information: (+1) 877-512-7200

Oronite D-Tect®, OLOA®, OGA®, OFA®, ODA®, PARATONE®, and TFA® are registered trademarks of the Chevron Oronite Company LLC.

3hECLN2 HAZARD3 DhNCFEACL N

EUA33 FEACL N:

- Acute aquatic toxicant: Category 3.
- Chronic aquatic toxicant: Category 3.

hvironmental Hazards:

- Harmful to aquatic life with long lasting effects.

ORhEAPCL NARY 3 CACHMhNC3:

Prevention:

- Avoid release to the environment.

Disposal:

- Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARD3 NL CL CHhRWTh EUA33 FThD: Heating may release highly toxic and flammable hydrogen sulfide (H₂S). Do not attempt rescue without supplied-air respiratory protection.

3hECLN0 ELMOL 3TCLN/ NFLRMAACL N LN NGRhDhNC3

EL MOL N hNC3	EA3 NPM4 hR	AML PNC
Highly refined mineral oil (C15 - C50)	Mixture	40 - 45 %weight
Zinc alkyl dithiophosphate	68649-42-3	5 - 10 %weight
Arenesulfonic acid, alkyl derivatives, metal salts	Trade secret	1 - 5 %weight
Branched alkylphenol and Calcium branched alkylphenol	74499-35-7 & 132752-19-3	< 0.3 %weight

Note that the chemical identity of some or all of the above components is considered confidential business information and is being withheld as permitted by 29 CFR 1910.1200 and various State Right-To-Know Laws.

3hECL N k FR3CAD MhA3PRh3

Description oSrst aid measures

hfe: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

3, in: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

ngestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

nyalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H2S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Most important sf mptoms and eSects5body acute and delaf ed

MMhDTACH HhAUCH hFFhEC3

hfe: Not expected to cause prolonged or significant eye irritation.

3, in: Repeated contact with the skin may cause irritation. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response.

ngestion: Not expected to be harmful if swallowed.

nyalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DhUAYhd L R L CHhR HhAUCH hFFhEC3: Not classified

ndication oSanf immediate medical attention and special treatment needed

Note to Oyf sicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see Chevron SDS No. 301.

3hECLN B FRh FGHCNG MhA3PRh3

hXCNGPBHNG MhDTA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

ORL ChECLN LF FRh FGHCNR3:

Fire Figyting Instrctions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Nitrogen, Sulfur, Phosphorus, Zinc, Molybdenum, Calcium, Magnesium, Boron.

3hECLN 1 AEEThNCAURhUhA3h MhA3PRh3

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

3hECLN 6 HANDUNG AND 3CL RAGh

General Handling Information: The maximum handling temperature is 85°C. The recommended reheating medium is hot water or regulated low pressure steam. Care must be taken not to exceed the temperatures stated above when reheating this material in order to avoid decomposition that releases hazardous fumes. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: If adequate engineering controls are used, short term activities such as loading, unloading and in-line blending may occur at temperatures ranging from 80-85°C (176-185°F). During shipment by railcar or tank truck, loading temperatures as high as 80-85°C (176-185°F) may be used and are expected to drop to 66°C (150°F) or lower within 7 days. Storage temperatures for up to 2 weeks should not exceed 66°C (150°F). The recommended long-term (2 weeks or more) storage temperature is ambient to 45°C (113°F) maximum. Do not get in eyes, on skin, or on clothing. Do not breathe gas. Wash thoroughly after handling.

Unusual Handling Hazards: Toxic quantities of hydrogen sulfide (H₂S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H₂S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H₂S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H₂S, the concentration should be measured by the use of fixed or portable devices.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations)

and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: The maximum short-term (<2 week(s)) storage temperature is 66°C. The maximum long-term (>2 week(s)) storage temperature is 45°C.

Section 7: Hazardous Information

Section 3: Health Hazards

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE information below.

Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

Section 4: Handling

Use in a well-ventilated area.

Section 5: Personal Protective Equipment (PPE)

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

Skin Protection: Wear chemical personal protective equipment (PPE) to prevent skin contact. Selection of chemical protective clothing should be performed by an Occupational Hygienist or Safety Professional and be based upon applicable standards (ASTM F739 or EN 374). Using chemical PPE depends upon operations conducted and may include chemical gloves, boots, chemical apron, chemical suit, and complete facial protection. Refer to PPE manufacturers to obtain breakthrough time information to determine how long PPE can be used before it needs to be replaced. Unless specific glove manufacturer data indicates otherwise, the below table is based upon available industry data to assist in the glove selection process and is intended to be used as reference only.

Eye/Face Glove Material	Cyclic Stress (MPa)	Typical Breakthrough Time (minutes)
Butyl	0.7	120
Neoprene	0.61	60
Nitrile	0.8	30
Nitrile	0.23	7
Polyvinyl Chloride (PVC)	1.1	15
Viton Butyl	0.3	120

Respirator Protection: No respiratory protection is normally required.

If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron SDS No. 301. If user

operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	CWA	3ChU	ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 3. HAZARD IDENTIFICATION

Attention: The data below are typical values and do not constitute a specification.

Color: Brown
Physical State: Viscous liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air) 1x: No data available
Initial Boiling Point: No data available
Solubility: Insoluble in water.
Freezing Point: No data available
Melting Point: No data available
Density: 0.9715 kg/l @ 15°C (59°F)
Viscosity: 1765 cSt @ 40°C (104°F)
Expansion Coefficient / °F: 0.000360
Evaporation Rate: No data available
Decomposition temperature: No data available
Water Partition Coefficient: No data available

Flammability (Solid/Gas): Not Applicable

Flashpoint: (Pensky-Martens Closed Cup) 140 °C (284 °F) (Minimum)
Autoignition: No data available
Flammability Limits (Lower/Upper): Lower: No data available Upper: No data available

SECTION 9. CHEMICAL SAFETY AND HAZARD

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid: Do not exceed handling and storage temperatures listed in SDS Section 7 (Handling and Storage).
Incompatible Materials: Not applicable
Hazardous Decomposition Products: Hydrogen Sulfide (See Section 7), Alkyl Mercaptans (See Section 7)

Hazardous Polymerization: Hazardous polymerization will not occur.

3hECLN II CLXEL ULG EAU NFL RMACT N

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on an evaluation of the data for similar products. These data show that a specific component present in this product antagonizes (or decreases the severity of) the eye irritation of the ZnDTP.

3, in Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

3, in Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

Additional Information:

This product contains Arenesulfonic acid, alkyl derivatives, metal salts. This substance may cause skin sensitization, eye irritation, lung effects, skin corrosion. When using this substance, avoid skin contact, avoid ingestion, use skin protection. This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as: carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

Tetrapropenyl phenol (TPP), also known as dodecyl phenol, was tested in a rat oral gavage one-generation reproductive toxicity study (doses of 0, 5, 25, or 125 mg/kg/day) and a rat dietary two-generation reproductive toxicity study (doses of 0, 1.5, 15, or 75 mg/kg/day). Results from the one-generation study demonstrated reduced ovary weights and changes in male reproductive accessory organs (decreased organ weights, decreased secretions, and decreased epididymal sperm concentrations) at 25 mg/kg/day; 5 mg/kg/day was identified as the No Observed Adverse Effect Level (NOAEL). Results from the two-generation study demonstrated prolonged estrous cyclicity, reduced ovary weights, accelerated sexual maturation, decreased mean live litter size, decreased fertility rates, hypospermia, and reduced weights in male reproductive accessory organs at 75 mg/kg/day; 15 mg/kg/day was identified as the NOAEL.

Evaluation of these two primary studies of TPP (one- & two-generation reproductive toxicity studies), as well as supporting data from additional in-vivo & in-vitro studies of both TPP and substances containing TPP & TPP/calcium salts as an impurity resulted in a classification of TPP as a Category 1B under the criteria of the Globally Harmonized System and Regulation (EC) No 1907/2006 (presumed reproductive hazard to humans).

The studies were also evaluated to identify a valid & reliable specific concentration limit (SCL) for reproductive effects, below which reproductive toxicity would not be expected to occur. An SCL of 1.5 wt% TPP & TPP/calcium salts was derived based on the identified NOAEL from the rat dietary two-generation reproductive toxicity study, and confirmed by supporting studies of substances containing TPP as an impurity.

3hECLN12 hELULGEAUNFLRMACLN

hELCLXETCY

This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

The product has not been tested. The statement has been derived from the properties of the individual components.

This material contains one or more components that have a branched alkylphenol impurity that is highly toxic to aquatic organisms (disclosed in Section 3). The components containing the impurity have been tested and are not toxic to aquatic organisms. Therefore the data in Section 3 for the alkylphenol impurity should not be used to classify the product for aquatic toxicity.

ML4TJCY

No data available.

OhR3BChNEh AND DhGRADA4TJCY

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

OLChNCTAUCL4LAEEMPPUACH

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

3hECLN10 DBOL3AU ELN3DhRACLN3

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

3hECLN1k CRAN3OLRCNFLRMACLN

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DL C 3yipping Description: NOT REGULATED AS HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

ML/MDG 3yipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

EAL/ACA 3yipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Cransport in bul, according to AnnewTtoSMAROL U 60/67 and tye T E code:
Not applicable

3hECLN I B RhGPUACLR Y NFL RMACLN

hOERA 0I I /0I 2 E AChGL R Th3: Not applicable

RhGPUACLR Y UB C3 3hAREHhD:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)
03=EPCRA 313	08-2=TSCA 12(b)
04=CA Proposition 65	

The following components of this material are found on the regulatory lists indicated.

Zinc alkyl dithiophosphate	03, 06, 07
Arenesulfonic acid, alkyl derivatives, metal salts	08-2

U.S. Toxic Substances Control Act (TSCA): The product contains a chemical substance subject to a Consent Order or Significant New Use Rule (SNUR) per 40 CFR 721.11180.

EHhM EAU T8hNCL R Th3:

All components comply with the following chemical inventory requirements: AIIIC (Australia), DSL (Canada), ENCS (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

One or more components has been notified but may not be listed in the following chemical inventories: IECSC (China). Separate notification may be required.

Please contact Oronite at SDS_REACH@chevron.com for more information concerning EU-REACH.

3hECLN I 1 L CHhR NFL RMACLN

NFOA RACNG3: Health: 2 Flammability: 1 Reactivity: 0

HMB RACNG3: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Rh8 B L N 3 C A Ch M h NC: SECTION 08 - Personal Protective Equipment information was modified.

Revision Date: September 22, 2022

A44 Rh8 T A C L N 3 C H A C M A Y H A 8 h 4 h h N P 3 h D T N C H B D L E P M h NC:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Technical Center, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The information is based on the data sources () are and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and () may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications to the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make its own determination of the suitability of the material for its particular purpose.



Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 1 of 13

ExxonMobil Chemical Company
22777 Springwoods Village Parkway
Spring, TX 77389-1425

Subject: OSHA Hazard Communication 2012 Combustible Dust Labeling

Dear ExxonMobil Customer:

As you may be aware, in March 2012, the U.S. Occupational Safety and Health Administration (OSHA) issued its final Hazard Communication Standard which stated its intent to adopt the United Nations' Globally Harmonized System (GHS) for the classification and labeling of hazardous substances. This updated hazard communication standard requires product labels for hazardous substances and mixtures. In addition to product labels, the standard requires suppliers to provide Safety Data Sheets (SDSs), previously known as Material Safety Data Sheets (MSDSs), for all hazardous products.

The UN GHS does not contain a classification for combustible dust hazards. The combustible dust hazard was an element OSHA desired to include in its standard. As such, OSHA amended the standard definition of 'hazardous chemical' to include 'combustible dust' which has resulted in a hazard classification of certain polymer materials and the need to provide a hazard label. For polymer materials presenting a combustible dust hazard as shipped, a label will be applied to each package. For polymers that do not present a combustible dust hazard in the shipped form, OSHA permits the transmittal of label information with the SDS. Enclosed please find the combustible dust label for the referenced product.

If you have any questions, please direct them to your ExxonMobil Customer Service Representative.



Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 2 of 13

Please find below an OSHA HazCom 2012 label for LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - for combustible dust hazard.

LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

EXXONMOBIL CHEMICAL COMPANY

SDS – LOC. 106

22777 Springwoods Village Parkway

Spring, TX 77389-1425 USA

24 Hour Health Emergency

(800) 726-2015

Product Technical Information

(832) 624-8500

Supplier General Contact

(832) 624-8500

Transportation Emergency Phone

(800) 424-9300 or (703) 527-3887 CHEMTREC

Warning

May form combustible dust concentrations in air

**Dust clouds are explosive
Product is a static accumulator
Avoid heat, sparks, open flame
Earth wherever possible**

For more information, see Safety Data Sheet

**For further information on this product,
See manufacturer's data sheet**

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix
Revision Date: 04 Apr 2018
Page 3 of 13

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix
Product Description: LLDPE with polymer processing aid (PPA), see Section 16 for applicable grades.
Intended Use: Coatings, Extrusion and moulding, Film

COMPANY IDENTIFICATION

Supplier: EXXONMOBIL CHEMICAL COMPANY
SDS – LOC. 106
22777 Springwoods Village Parkway
Spring, TX 77389-1425 USA
24 Hour Health Emergency (800) 726-2015
Transportation Emergency Phone (800) 424-9300 or (703) 527-3887 CHEMTREC
Product Technical Information (832) 624-8500
Supplier General Contact (832) 624-8500

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Combustible Dust

LABEL:

Pictogram: No Pictogram

Signal Word: Warning

Hazard Statements:

May form combustible dust concentrations in air.

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

WARNING: May form combustible dust concentrations in air (during processing/handling). Thermal burn hazard - contact with hot material may cause thermal burns. Material can accumulate static charges which

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 4 of 13

may cause an ignition. Spilled pellets present a slipping hazard on hard surfaces.

HEALTH HAZARDS

If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapors/fumes given off may cause respiratory tract irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health: 1	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 1	Flammability: 1	Reactivity: 0

SECTION 3	COMPOSITION / INFORMATION ON INGREDIENTS
------------------	---

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
TRISNONYL PHENYL PHOSPHITE	26523-78-4	< 0.25%	H317, H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4	FIRST AID MEASURES
------------------	---------------------------

INHALATION

At ambient/normal handling temperatures, no adverse effects due to inhalation of dust are expected. In case of adverse exposure to vapors and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

SKIN CONTACT

Wash contact areas with soap and water. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix
Revision Date: 04 Apr 2018
Page 5 of 13

SECTION 5	FIRE FIGHTING MEASURES
------------------	-------------------------------

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard. Hydrogen fluoride, a corrosive and toxic gas, and other potentially hazardous fluorine-containing compounds may be released upon combustion.

Hazardous Combustion Products: Flammable hydrocarbons, Hydrogen fluoride, Incomplete combustion products, Oxides of carbon, Smoke, Fume

FLAMMABILITY PROPERTIES

Flash Point [Method]: N/A

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/A

SECTION 6	ACCIDENTAL RELEASE MEASURES
------------------	------------------------------------

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. For example, use non-sparking tools and prohibit smoking, flares, sparks or flames in immediate area. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 6 of 13

SPILL MANAGEMENT

Land Spill: Spilled pellets present a slipping hazard on hard surfaces. Prevent dust cloud. Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas. For Large Spills: Cover spill with plastic sheet or tarpaulin to minimize spreading.

SECTION 7

HANDLING AND STORAGE

HANDLING

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dust from material can accumulate electrostatic charges due to friction from transfer and mixing operations and cause an electrical spark (ignition source). Provide adequate precautions to ignition sources, such as electrical grounding and bonding, inert atmosphere or non-sparking tools. However, bonding and grounds may not eliminate the hazard for static accumulation. Consult local applicable standards for guidance. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids and EN 61241, Electrical Apparatus for Use in the Presence of Combustible Dust for safe handling. Avoid elevated temperatures for prolonged periods of time. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight, and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid inappropriate stacking of palletized bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations.

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]

Transport Pressure: [Ambient]

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

Storage Temperature: [Ambient]

Storage Pressure: [Ambient]

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 7 of 13

Suitable Containers/Packing: Bulk Containers; Drums; Bags; Boxes; Hopper Cars; Octatiner; Silos
Suitable Materials and Coatings (Chemical Compatibility): Polyethylene; Aluminum

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: For dusty conditions, OSHA recommends for particulates not otherwise regulated an 8-hour TWA of 15 mg/m³ (total dust), 5 mg/m³ (respirable fraction); ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m³ (inhalable particles), 3 mg/m³ (respirable particles).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded. **SPECIAL PRECAUTIONS:** Should significant vapors/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that the current ACGIH-TLVs for thermal degradation by-products be observed. Contact your local sales representative for further information. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product are designed and maintained to minimize dust generation and accumulation. Ensure that dust-handling systems (such as exhaust ducts, dusts collectors, vessels, and processing equipment) are designed to minimize the potential for dust ignition and prevent explosion propagation. For example, use explosion relief vents, an explosion suppression system or inert equipment internals. Additional examples of proper equipment include using only appropriately classified electrical equipment and powered industrial trucks.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust / oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode.

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 8 of 13

Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
------------------	---

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Powder, Granule, Pellet
Color: Clear to Opaque, White to Off-White
Odor: None to Mild
Odor Threshold: N/A

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.9 - 0.95 [In-house method]
Bulk Density: 0.4 g/cc at 20 °C - 1 g/cc at 20 °C [In-house method]
Flammability (Solid, Gas): N/A
Flash Point [Method]: N/A
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/A
Boiling Point / Range: N/A
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/A
Vapor Pressure: N/A

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 9 of 13

Evaporation Rate (n-butyl acetate = 1): N/A
 pH: N/A
 Log Pow (n-Octanol/Water Partition Coefficient): N/A
 Solubility in Water: Negligible
 Viscosity: N/A
 Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/A
 Melting Point: 115°C (239°F) - 130°C (266°F) [In-house method]
 Molecular Weight: > 25000
 Hygroscopic: No

SECTION 10	STABILITY AND REACTIVITY
-------------------	---------------------------------

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures for prolonged periods of time.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
-------------------	----------------------------------

INFORMATION ON TOXICOLOGICAL EFFECTS

<u>Hazard Class</u>	<u>Conclusion / Remarks</u>
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on chemical structure (polymers).
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on chemical structure (polymers).
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 10 of 13

Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on chemical structure (polymers).
Aspiration: No end point data for material.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on chemical structure (polymers).
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on chemical structure (polymers).
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on chemical structure (polymers).
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on chemical structure (polymers).

OTHER INFORMATION

For the product itself:

Dust may be irritating to the eyes and respiratory tract.

Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes and respiratory tract.

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Additives that are encapsulated in the polymer. Under the normal conditions for processing and use of this polymer the encapsulated additives are not expected to pose any health hazard. However, grinding of the polymer is not recommended without the use of appropriate measures to control exposure (see Section 8 - Engineering Controls).

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

Material -- Not expected to be harmful to terrestrial organisms.

MOBILITY

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix
Revision Date: 04 Apr 2018
Page 11 of 13

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

Hydrolysis:

Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis:

Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation:

Material -- Transformation due to atmospheric oxidation not expected to be significant.

BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal. Incinerator must be equipped to neutralize or trap hazardous combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018
Page 12 of 13

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
-------------------	-------------------------------

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: Please contact Customer Service (see Section 1 for supplier contact information).

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

CWA / OPA: Plastic pellets are defined by the US EPA under the Clean Water Act (40CFR122.26) as a "significant material" which requires any industrial plant that may expose pellets to storm water to secure a storm water permit. Violations of the rule carry the same penalties as other Clean Water Act violations. Pellets found in storm water runoff are subject to EPA regulations with the potential for substantial fines and penalties.

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: Combustible Dust

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
1-PROPENE, 1,1,2,3,3,3-HEXAFLUORO POLYMER WITH 1,1-DIFLUOROETHENE	9011-17-0	5

--REGULATORY LISTS SEARCHED--

- | | | | |
|---------------|------------------|-------------------|-------------|
| 1 = ACGIH ALL | 6 = TSCA 5a2 | 11 = CA P65 REPRO | 16 = MN RTK |
| 2 = ACGIH A1 | 7 = TSCA 5e | 12 = CA RTK | 17 = NJ RTK |
| 3 = ACGIH A2 | 8 = TSCA 6 | 13 = IL RTK | 18 = PA RTK |
| 4 = OSHA Z | 9 = TSCA 12b | 14 = LA RTK | 19 = RI RTK |
| 5 = TSCA 4 | 10 = CA P65 CARC | 15 = MI 293 | |

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
-------------------	--------------------------

Product Name: LINEAR LOW DENSITY POLYETHYLENE (PPA, TNPP) - Grades designated by LL prefix

Revision Date: 04 Apr 2018

Page 13 of 13

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

H400: Very toxic to aquatic life; Acute Env Tox, Cat 1

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Chemical cover letter information was modified.

Company Mailing Address information was deleted.

Company Mailing Address information was modified.

Section 01: Company Mailing Address information was deleted.

Section 01: Company Mailing Address information was modified.

Section 07: Suitable Containers information was modified.

THIS MSDS COVERS THE FOLLOWING MATERIALS: ExxonMobil™ LLDPE resins: | LL 3001.63

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0, 0, 0, 0, 0, 0

DGN: 4409211KUS (1025293)

Copyright 2002 Exxon Mobil Corporation, All rights reserved



SHINTECH INC.

SAFETY DATA SHEET POLYVINYL CHLORIDE RESIN

FILE NUMBER: SHINTECH 04
REVISION DATE: 08/30/18
SUPERCEDES DATE: 04/03/17

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Shintech PVC, All Grades
SYNONYMS: PVC, Vinyl Resin, polyvinyl chloride

MANUFACTURER: Shintech, Inc.
ADDRESS: 5618 East Highway 332
Freeport, Texas 77541

EMERGENCY PHONE: (979) 233-7861 (Ext. 300)

CHEMICAL NAME: Polyvinyl Chloride
CHEMICAL FAMILY: Organic Polymer
CHEMICAL FORMULA: $(CH_2-CHCl)_n$
CAS No.: 9002-86-2

PRODUCT USE: Polyvinyl Chloride (PVC) Fabrication
PREPARED BY: Shintech Safety Department

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification: Not Classified
EU/ECC: Not Classified - EU directive 67/548/EEC or 1999/45/EC and the CLP EU Regulation 1272/2008/EC
OSHA 1910.1200: Not Classified
Label Elements: Not Required

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS#	EINECS#	GHS Hazard Statement Codes	%
Polyvinyl Chloride Resin	9002-86-2	N/A	N/A	> 99.8

SECTION 4: FIRST AID MEASURES

- EYES:** Immediately flush the eyes with large amounts of room temperature water for a minimum of 15 minutes. Hold the eyelids apart during the flushing operation. Get immediate medical attention if irritation persists.
- SKIN:** Wash affected area with soap and water. Get immediate medical attention if irritation persists.
- INGESTION:** Ingestion of this product under normal conditions does not contribute to any known adverse health effects. If large amounts are ingested get medical attention.
- INHALATION:** Remove the person from the exposure and move to fresh air. Get immediate medical attention if severe coughing or breathing difficulty occurs.

Most Important Symptoms or Effects (acute and delayed): This product does not present health hazards under normal conditions of use. However, mechanical operations associated with the use of PVC material can produce elevated concentrations of airborne PVC particulates. Contact with PVC particulates can be irritating to the eyes and respiratory tract. Avoid contact with the eyes and wear appropriate eye protection when necessary. Operations that produce airborne dusts should be conducted in well ventilated areas. When exposures to airborne PVC particulates exceed the applicable exposure limits, appropriate respiratory protection must be worn. PVC particulates may aggravate any pre-existing respiratory conditions or allergies.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: Not Applicable

FLAMMABLE LIMITS (% VOLUME IN AIR)

Lower Explosive Limit (LEL):	Not Applicable
Upper Explosive Limit (UEL):	Not Applicable

AUTOIGNITION TEMPERATURE: 945°F

EXTINGUISHING MEDIA: Water, dry powder, foam, carbon dioxide, or sand is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide inside confined spaces. Collect contaminated fire-fighting water separately.

FIRE FIGHTING PROCEDURES: Avoid inhalation of material or combustion by-products. Wear fire fighter's protective clothing and a NIOSH-approved self-contained breathing apparatus (SCBA).

UNUSUAL FIRE AND EXPLOSIVE HAZARDS: Exposure to fire or explosions can produce hydrogen chloride.

NFPA: Health 0 (Normal)
Fire 1 (Above 200°F)
Reactivity 0 (Stable)
Special None

HMIS: Health 0 (none)
Flammability 1 (Slight)
Reactivity 0 (none)
PPE A (safety glasses)

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Use the personal protective equipment recommended in Section 8.

SPILL PROCEDURES: Contain spill immediately. Restrict access. PVC is a slipping hazard if spilled. Non-recoverable product, contaminated soil, debris and other materials should be placed in proper containers for reclamation or disposal. Avoid generating dust during containment, clean up, and disposal.

DISPOSAL: Follow the procedures recommended in Section 13.

SECTION 7: HANDLING AND STORAGE

HANDLING: Wear personal protective equipment and follow the exposure control measures recommended in Section 8. Avoid contact with eyes and prolonged breathing of airborne PVC. PVC can acquire a substantial static electrical charge, which may cause a spark. Handling and processing equipment should have electrical grounding. Use good housekeeping practices to minimize PVC particulates, especially dust, from accumulating and minimize dust from becoming airborne. Wash thoroughly after handling.

STORAGE: Store in a cool, dry, properly ventilated place and keep isolated from open flames and other sources of ignition.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels of PVC dust below the exposure standards and guidelines. Local exhaust ventilation is preferred because it is capable of controlling contaminant emissions at the source and preventing dispersion into the general work area. For additional information on ventilation, refer to the ACGIH text, *Industrial Ventilation, a Manual of Recommended Practices*.

EYE PROTECTION: Wear ANSI approved safety glasses with side shields and/or an appropriate full-face shield. All eye protection should be selected and worn in accordance with the general OSHA PPE standard (29 CFR 1910.132) and the OSHA eye and face protection standard (29 CFR 1910.133).

SKIN PROTECTION: Under normal conditions, the use of additional PPE is not necessary to protect the skin. However, protective clothing, including gloves, aprons, and other outer garments may be desirable in extremely dusty areas. All PPE for skin protection should be selected and worn in accordance with the general OSHA PPE standard (29 CFR 1910.132), the

OSHA eye and face protection standard (29 CFR 1910.133), and the OSHA hand protection standard (29 CFR 1910.138).

RESPIRATORY PROTECTION: Use a NIOSH-approved air purifying respirator with an N95 cartridge where airborne concentrations are expected to exceed exposure limits. All respirators should be selected and worn in accordance with the general OSHA PPE standard (29 CFR 1910.132) and the OSHA respiratory protection standard (29 CFR 1910.134).

EXPOSURE GUIDELINES:

<u>COMPONENT</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>NIOSH IDLH</u>
Dust (total)	15 mg/m ³ (TWA)	Not Established	Not Established
Dust (respirable)	5 mg/m ³ (TWA)	1 mg/m ³ (TWA)	Not Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Granulate Solid (free flowing)
COLOR:	White
ODOR:	Odorless
ODOR THRESHOLD:	Not Applicable
PH:	Not Applicable
BOILING POINT/BOILING RANGE	Not Applicable
MELTING/FREEZING POINT:	Not Applicable
FLASH POINT:	Not Applicable
EVAPORATION RATE:	Not Applicable
FLAMMABILITY SOLID:	Not Applicable
UPPER/LOWER EXPLOSIVE LIMITS:	Not Applicable
VAPOR PRESSURE:	Not Applicable
VAPOR DENSITY (AIR):	Not Applicable
WATER SOLUBILITY:	Not Soluble
RELATIVE DENSITY (SPECIFIC GRAVITY):	1.4
WATER SOLUBILITY:	Not Soluble
PARTITION COEFFICIENT: n-octanol/water:	No Data Available
AUTO IGNITION TEMPERATURE:	945°F
DECOMPOSITION TEMPERATURE :	No Data Available
VISCOSITY:	Not Applicable To Solids
MOLECULAR FORMULA:	(CH ₂ -CHCl) _n
MOLECULAR WEIGHT:	20,000 – 150,000 g/mole
VINYL CHLORIDE:	This Polyvinyl Chloride product contains Vinyl Chloride Monomer on the order of 0.1 to 5 ppm by weight.

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable at normal temperatures and pressures
CONDITIONS TO AVOID:	Avoid all possible sources of ignition, heat and flames.

INCOMPATIBLE MATERIALS: Avoid contact with acetal or acetal copolymers and amines (derivatives of ammonia).
HAZARDOUS DECOMPOSITION PRODUCTS: Mostly Hydrogen Chloride.
HAZARDOUS POLYMERIZATION: Has not been reported.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA: There is limited toxicity information available for this product.
CARCINOGENICITY: This product is not considered carcinogenic by OSHA, NTP, or IARC.
REPRODUCTIVE EFFECTS: None reported
MUTAGENICITY: Has not been reported
TERATOGENICITY: Has not been reported

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: There is limited information available for this product.

ENVIRONMENTAL FATE: There is limited information available for this product.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Do not dump this product into any sewers, on the ground, or into any body of water. Dispose of in accordance with all applicable federal, state, and local regulations. Waste characterization and compliance with applicable laws are the responsibility of the waste generator.

RCRA P-Series: Not Listed
RCRA U-Series: Not Listed
NPRI: Not Listed

SECTION 14: TRANSPORT INFORMATION

SHIPPING NAME:	Polyvinyl Chloride	IATA HAZARD CLASS:	Not Regulated
DOT HAZARD CLASS:	Not Regulated	IMGD CLASS:	Not Regulated
DOT SHIPPING ID:	Not Required	RID/ADR CODES:	Not Required
PACKING GROUP:	Not Required	PACKING GROUP:	Not Required
LABEL:	Not Required	HAZARD ID:	Not Required

* This product is not regulated as a hazardous material by the U.S. Department of Transportation (DOT), IMGD, EU, United Nations, IATA or the Canadian Transportation of Dangerous Goods (TDG) regulations.

SECTION 15: REGULATORY INFORMATION

GHS Classification / Hazard Statement Codes:	Not Classified
CERCLA Sections 102a/103 (40 CFR 302.4):	Not Regulated
SARA Title III Section 302 (40 CFR 355.30):	Not Regulated
SARA Title III Section 304 (40 CFR 355.40):	Not Regulated
SARA Title III Section 313 (40 CFR 372.65):	Not Regulated
SARA Title III Section 311/312 Hazardous Categories (40 CFR 370.21):	
Acute:	No
Chronic:	No
Fire:	No
Reactive:	No
Sudden Release:	No
California Proposition 65:	PVC is not listed. It is unlikely that unpolymerized vinyl chloride from this resin will contribute to workplace exposures under normal conditions of use but trace exposure cannot be ruled out. Users must determine if vinyl chloride may be released from the use of this product. If so, the appropriate Prop 65 warning language is as follows:  WARNING: This product can expose you to chemicals including vinyl chloride, which are known to the State of California to cause cancer. For more information go to: www.P65Warning.ca.gov
TSCA:	Listed on the Inventory
WHMIS (Canada):	Not Classified
CPR (Canada):	Not Regulated
IDL (Canada):	Not Regulated
DSL (Canada):	Listed on the Inventory
ESIS (Europe):	Not Regulated

OSHA 29 CFR 1910.1017 Vinyl Chloride Standard

Vinyl Chloride Monomer (VCM) is classified as a carcinogen. The U.S. Occupational Safety and Health Administration specifically regulates manufacturing, handling, and processing of Polyvinyl Chloride to control exposures to VCM. Those regulations are published as 29 CFR 1910.1017. Handlers and processors of Polyvinyl Chloride must be familiar with these regulations. None of the information presented in this safety data sheet should be construed to contradict or supersede these regulations.

SECTION 16: OTHER INFORMATION

As the conditions or methods of use of this PVC product are beyond our control, we do not assume any responsibility for and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate, but all statements or recommendations are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with use of the material or the results to be obtained from the use of the information or material. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user.

ACGIH:	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
C:	Ceiling Limit
CAS#:	Chemical Abstracts System Number
CERCLA:	Comprehensive Environmental Response, Compensation, & Liability Act
DOT:	Department of Transportation
DSL:	Domestic Substance List
EC ₅₀ :	Effective concentration that inhibits the endpoint to 50% of control population
EINECS:	European List of Notified Chemical Substances
EPA:	U.S. Environmental Protection Agency
ESIS:	European Chemical Substances Information System
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IDLH:	Immediately Dangerous to Life and Health
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
LC ₅₀ :	Concentration of air resulting in death to 50% of experimental animals
LD ₅₀ :	Administered dose resulting in death to 50% of experimental animals
LEL:	Lower Explosive Limit
MSHA:	Mine Safety and Health Administration
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
PPE :	Personal Protective Equipment
RCRA:	Resource Conservation and Recovery Act
SARA:	Superfund Amendments and Reauthorization Act
STEL:	Short Term Exposure Limit
STP:	Standard Temperature and Pressure
TLV:	Threshold Limit Value
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average
UEL:	Upper Explosive Limit
WHMIS:	Workplace Hazardous Materials Information System

SAFETY DATA SHEET

Section 1 – Product and Company Identification

Material Name - Semolina
 Chemical Category - Food Ingredient

Manufacturer - Ardent Mills, LLC; Ardent Mills, ULC: Molinos de Puerto Rico, LLC
 1875 Lawrence Street
 Denver, CO 80202
www.ardentmills.com

Telephone
 General/Emergency - Call your Ardent Mills' Customer Service Rep

Preparation Date - 10/15/2014
 Last Revision Date - 09/24/2020

Section 2 – Hazards Identification

Emergency Overview

WARNING

May form combustible dust concentrations in air (during processing).

Prevention - Avoid generating fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source

Response - When responding to explosion or any subsequent fire, DO NOT use high pressure extinguishing agent as this may spread the dust and may create an additional ignitable dust cloud.

Storage/Disposal - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Potential Health Effects

Eyes – Direct contact with eyes may cause temporary irritation

Skin – None known.

Inhalation – Dust may irritate the respiratory system.

Ingestion – Expected to be a low ingestion hazard.

Chronic Effects - May cause allergic reaction in persons sensitive to wheat proteins.

Environmental Effects - Not expected to be harmful to aquatic organisms.

Physical Descriptions

Form – Solid

Color – Creamy yellow particles

Odor – No data available

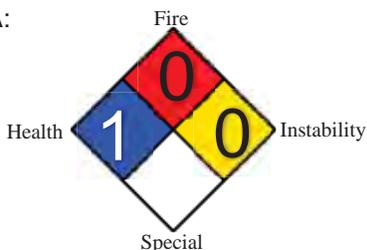
Flash Point – Not relevant

WHMIS – Other Toxic Effects – D2A

EU – Sensitizer – R42

GHS - Specific Target Organ Toxicity Single Exposure – Category 3; Respiratory Tract Irritation, Skin Corrosion/Irritation – Category 3; Serious Eye Damage, Eye Irritation – Category 2B; Respiratory Sensitizer – Category 1

NFPA:



Potential Health Effects

Inhalation

Acute (immediate) – May cause irritation

Chronic (delayed) – According to ACGIH, repeated and prolonged exposure to flour may cause lung effects referred to as “Baker’s Lungs” or allergic sensitization resulting in what is referred to as “Baker’s Asthma”.

Skin

Acute (immediate) – Under normal conditions of use, no health effects are expected.

Chronic (delayed) – Under normal conditions of use, no health effects are expected.

Eye

Acute (immediate) – May cause irritation

Chronic (delayed) – Under normal conditions of use, no chronic effects are expected.

Ingestion

Acute (immediate) – No effects are expected for most people. Listed as food allergen.

Chronic (delayed) – Under normal conditions of use, no chronic effects are expected.

Section 3 – Composition/Information on Ingredients

Hazardous Components

Chemical Name	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments
Semolina	NDA	100%	NDA		

Section 4 – First Aid Measures

Inhalation

- Get medical attention if symptoms occur. Remove to fresh air.

Skin

- No data available.

Eye

- Get medical attention if symptoms occur. If contact with eyes directly, flush with gently flowing fresh water thoroughly.

Ingestion

- Get medical attention if symptoms occur.

Section 5 – Fire Fighting Measures

Extinguishing Media

- Dry chemical, CO2, foam or water fog.

Unsuitable Extinguishing Media

- High pressure water spray may cause a combustible dust cloud.

Firefighting Procedures

- FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: ALWAYS stay away from tanks engulfed in fire. LARGE FIRES: Move containers from fire area if can accomplish without risk.

Unusual Fire & Explosion Hazards

- Fine dust (typically less than 420 microns) associated with this product may represent a combustible dust hazard. Ignition energy (Kst value) vary with particle size.

Hazardous Combustion Products

- None known

Protection of Firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA).

Flash Point

- Not relevant.

Explosion Limits

Upper

- Not relevant

Lower

- Not relevant

Auto-ignition Temperature

- 390 to 500° F (199 to 260° C)

Section 6 – Accidental Release Measures

Personal Precautions

- No data available.

Emergency Procedures

- Keep unauthorized personnel away.

Environmental Precautions

- Avoid run off to waterways and sewers.

Containment/Clean-up Measures

- Carefully shovel or sweep up spilled material and place in suitable container. Use appropriate Personal Protective Equipment (PPE)

Prohibited Materials

- No data available.

Section 7 – Handling and Storage

Handling - Follow good manufacturing practices when handling this product. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 61: Standard for the Prevention of Fires and Dust Explosions in the Agricultural and Food Processing Facilities

Storage - No data available.

Special Packaging Materials - None required.

Incompatible Materials or Ignition Sources - None known.

Section 8 – Exposure Controls/Personal Protection

Personal Protective Equipment

Respiratory - Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face - Protective safety glasses recommended.

Hands - No data available.

Skin/Body - None required for normal handling.

General Industrial Hygiene Considerations - Persons who handle grain products must follow good hygienic practices (i.e. wash frequently, and wear clean clothing)

Engineering Measures/Controls - Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Exposure Limits/Guidelines			
	Result	ACGIH	United States - California
Dust associated with Semolina	TWAs	0.5 mg/m ³ TWA (inhalable fraction) <i>as Flour dust</i>	0.5 mg/m ³ PEL <i>as Flour dust</i>

Exposure Control Notations
ACGIH – Milled Wheat Products as Flour dust: Sensitizers

Exposure Limits Supplemental
ACGIH – Milled Wheat Products as Flour dust: TLV Basis – Critical Effects: (asthma, bronchitis, upper respiratory tract irritation)

Environmental Exposure Controls
No data available

Section 9 – Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	No data available.
Color	Creamy yellow	Odor	No data available.
Taste	No data available.	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	Not relevant	Physical and Chemical Properties	Not relevant
General Properties			
Boiling Point	Not relevant	Melting Point	Not relevant
Decomposition Temperature	Not relevant	Heat of Decomposition	Not relevant
pH	Not relevant	Specific Gravity/Relative Density	Not relevant
Density	Not relevant	Bulk Density	Not relevant
Water Solubility	Not relevant	Solvent Solubility	Not relevant
Viscosity	Not relevant		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant	VOC (Wt.)	Not relevant
VOC (Vol.)	Not relevant	Volatiles (Wt.)	Not relevant
Volatiles (Vol.)	Not relevant		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Auto-Ignition	390 to 500 F(199 to 260 C)
Self-Accelerating Decomposition Temperature (SADT)	Not relevant	Heat of Combustion (ΔH_c)	Not relevant
Burning Time	Not relevant	Flame Duration	Not relevant
Flame Height	Not relevant	Flame Extension	Not relevant
Ignition Distance	Not relevant		
Environmental			
Half-Life	Not relevant	Octanol/Water Partition coefficient	Not relevant
Coefficient of water/oil distribution	Not relevant	Bioaccumulation Factor	Not relevant
Bioconcentration Factor	Not relevant	Biochemical Oxygen Demand BOD/BOD5	Not relevant
Chemical Oxygen Demand	Not relevant	Persistence	Not relevant
Degradation	Not relevant		

Section 10 – Stability and Reactivity

Stability	- Stable when kept dry under normal temperatures and pressures.
Hazardous Polymerization	- Hazardous polymerization will not occur.
Conditions to Avoid	- High humidity and/or wet conditions.
Incompatible Materials	- None known.
Hazardous Decomposition Products	- None known.

Section 11 – Toxicological Information

Other Information	- This product has not been tested as a separate entity. No specific toxicological data is available for the ingredients.
--------------------------	---

Section 12 – Ecological Information

Ecological Fate	- No data available
Persistence/Degradability	- No data available
Bioaccumulation Potential	- No data available
Mobility in Soil	- No data available
Other Information	- Product has not been studied as distributed

Section 13 – Disposal Considerations

Product	- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
----------------	---

Section 14 – Transportation Information

DOT	- Not regulated as a hazardous material.
IATA	- Not regulated as a dangerous good.

Section 15 – Regulatory Information

Not any known regulatory list for hazardous materials.

Section 16 – Other Information

Preparation Date	- 10/01/2014
Last Revision Date	- 09/24/2020
Disclaimer/Statement Of Liability	- This Safety Data Sheet is provided as a courtesy to Ardent Mills' customers. The information provided herein is provided in good faith and is believed accurate and reliable as of the date indicated. However, no representation, warranty, or guarantee of any kind, expressed or implied, is made as to the accuracy, reliability, correctness, or completeness. Neither the above-named supplier nor any of its subsidiaries assumes any responsibility and/or liability for any loss, damage, injury, expense, direct or consequential, arising out of the use of the information contained herein. Final determination of the completeness and suitability of such information, and the suitability and safe conditions for use of any material is the sole responsibility of the user and user assumes all liability for loss, damage, injury, and/or expense arising out of the improper use of this material. No warranty, expressed or implied, regarding the material described herein shall be created by or inferred from any statement or omission in this SDS.



Safety Data Sheet

This safety data sheet complies with the requirements of: WHIMS 2015

Product name T-Storm F787B 3X6 AR-AFFF Bulk Blend

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product Identifier

Product name T-Storm F787B 3X6 AR-AFFF Bulk Blend

Other means of identification

Product code 711014

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Fire extinguishing agent

Uses advised against None known

Details of the Supplier of the Safety Data Sheet

Initial Supplier Identifier

Johnson Controls Inc.
Canadian Distribution Centre
20 Delta Park Blvd
Brampton ON L6T 5E7
Telephone: 1-888-888-7838

Emergency Telephone Number

Emergency telephone CHEMTREC 001-800-424-9300 or 001-703-527-3887

2. Hazards Identification

Classification

Serious eye damage/eye irritation	Category 1
-----------------------------------	------------

Label Elements

DANGER

Hazard statements

Causes serious eye damage



Product code 711014

/ Product name T-Storm F787B /
3X6 AR-AFFF Bulk Blend

PAGE 2 / 8



Precautionary Statements - Prevention

Wear eye/face protection

Precautionary Statements - Response

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor

OTHER INFORMATION

Causes mild skin irritation

3. Composition/information on Ingredients

Substance

Not Applicable.

Mixture

Chemical name	CAS No.	weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
2-(2-Butoxyethoxy)ethanol	112-34-5	0 - 10%	-	-
Sodium Octyl Sulfate	142-31-4	0 - 10%	-	-

4. First aid measures

Description of first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur.



Product code 711014

/ Product name T-Storm F787B /
3X6 AR-AFFF Bulk Blend

PAGE 3 / 8

Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms Burning sensation.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous Combustion Products	Carbon oxides. Fluorinated oxides. Nitrogen oxides (NOx). Oxides of sulfur.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
Other Information	Refer to protective measures listed in Sections 7 and 8.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up



Product code 711014

/ Product name T-Storm F787B /
3X6 AR-AFFF Bulk Blend

PAGE 4 / 8

Methods for containment Prevent further leakage or spillage if safe to do so.
Methods for cleaning up Pick up and transfer to properly labeled containers.
Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and Storage

Precautions for Safe Handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

8. Exposure Controls/Personal Protection

Control Parameters

Exposure Limits

Chemical name	Alberta	British Columbia	Ontario TWA	Quebec
2-(2-Butoxyethoxy)ethanol 112-34-5			TWA: 10 ppm	

OTHER INFORMATION None known.

Appropriate Engineering Controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.



Product code 711014

/ Product name T-Storm F787B /
3X6 AR-AFFF Bulk Blend

PAGE 5 / 8

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	No data available
Color	Opaque
Odor	Slight solvent
Odor Threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.0	
Melting point/freezing point	-1 °C / 30 °F	
Boiling point / boiling range	> 100 °C / 212 °F	
Flash Point	> 100 °C / 212 °F	
Evaporation Rate	No data available	No data available
Flammability (solid, gas)		No data available
Flammability limit in air		No data available
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	No data available
Vapor Density	No data available	No data available
Relative Density	1.00 - 1.25	
Water Solubility	Completely soluble	
Solubility in Other Solvents	No data available	No data available
Partition coefficient	No data available	No data available
Autoignition Temperature	No data available	No data available
Decomposition Temperature	No data available	No data available
Kinematic viscosity	No data available	No data available
Dynamic viscosity	No data available	No data available
Explosive properties	No data available.	
Oxidizing properties	No data available.	

OTHER INFORMATION

softening point	No data available
Molecular Weight	No data available
VOC content (%)	8.4392
Density	No data available
Bulk Density	No data available

10. Stability and Reactivity

Reactivity	No information available.
Chemical Stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to Avoid	None known based on information supplied.
Incompatible Materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.



Product code 711014

Product name T-Storm F787B
3X6 AR-AFFF Bulk Blend

PAGE 6 / 8

11. Toxicological Information

Information on Likely Routes of Exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on Toxicological Effects

Symptoms Redness. Burning. May cause blindness.

Numerical Measures of Toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	22,473.00 mg/kg
ATEmix (dermal)	33,750.00 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-Butoxyethoxy)ethanol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Sodium Octyl Sulfate 142-31-4	= 3200 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.



Product code 711014

/ Product name T-Storm F787B /
3X6 AR-AFFF Bulk Blend

PAGE 7 / 8

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. Ecological Information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
2-(2-Butoxyethoxy)ethan ol 112-34-5	EC50 (96h) > 100 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1300 mg/L Lepomis macrochirus	-	EC50 (48h) > 100 mg/L Daphnia magna EC50 (24h) = 2850 mg/L Daphnia magna

Persistence and Degradability

Bioaccumulation No information available.

Other Adverse Effects No information available.

13. Disposal Considerations

Waste Treatment Methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging Do not reuse empty containers.

14. Transport Information

TDG NOT REGULATED

MEX NOT REGULATED

ICAO (air) NOT REGULATED

IATA NOT REGULATED

IMDG NOT REGULATED

RID NOT REGULATED

ADR NOT REGULATED

ADN NOT REGULATED



Product code 711014

Product name T-Storm F787B
3X6 AR-AFFF Bulk Blend

PAGE 8 / 8

15. Regulatory Information

REGULATORY INFORMATION

International regulations

Ozone-depleting substances (ODS) Not Applicable

Persistent Organic Pollutants Not Applicable

Export Notification requirements Not Applicable

International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

16. Other information, including date of preparation of the last revision

<u>NFPA</u>	Health Hazards 2	Flammability 1	Instability 0	Physical and chemical properties -
<u>HMIS</u>	Health Hazards 2	Flammability 1	Physical Hazards 0	Personal Protection X

Revision date 23-May-2018

Revision note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Attachment 2

Examples of Completed Labels

Attachment 2 – WASTE LABELS

Use this Label for containers of Hazardous Waste

HAZARDOUS WASTE

FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

GENERATOR INFORMATION:

NAME Norfolk Southern Railway Company

ADDRESS RR Tracks adjacent N. Pleasant Dr./Taggart Rd.

CITY East Palestine STATE OH ZIP 44413

EPA ID NO. OHR000221457 EPA WASTE NO. U043

ACCUMULATION START DATE _____ MANIFEST TRACKING NO. _____

[RQ, UN3082, Waste, Environmentally Hazardous Substance, mixture, NOS (vinyl chloride), 39 PG 111]

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

CONTACT THE PROJECT WASTE COORDINATOR OR PROJECT MANAGER FOR QUESTIONS ON COMPLETING WASTE LABELS

EPA Waste Codes listed on the waste profile for this waste stream (i.e. U043 = vinyl chloride)

The manifest tracking number will be entered on the day of transport. This is the number in the top right corner of the hazardous waste manifest

The DOT proper shipping name will be listed on the waste profile.
UN3082 = liquid
UN3077 = solid

Accumulation Start Date is the day the first drop of waste is placed into the container

Use this Label for containers of Non-Hazardous Waste:

NON-HAZARDOUS WASTE

GENERATOR INFORMATION (Optional)

SHIPPER Norfolk Southern Railway Company

ADDRESS RR Tracks adjacent N. Pleasant Dr./Taggart Rd.

CITY, STATE, ZIP East Palestine, OH 44413

CONTENTS non-impacted commodities

NON-HAZARDOUS WASTE

Attachment 1 – WASTE LABELS

Use this Label if the Waste has been sampled and the waste determination is unknown, pending receipt of the analytical

THIS CONTAINER ON HOLD PENDING ANALYSIS	
CONTENTS SOIL CUTTINGS and DEBRIS (PPE, GEOPROBLE SLEEVES)	
ORIGIN OF MATERIALS INSTALL of MW-1	
ADDRESS RR Tracks adjacent N. Pleasant Dr./Taggart Rd., East Palestine, OH 44413	
CONTACT Norfolk Southern 404-273-4472	
DO NOT TAMPER WITH CONTAINER! AUTHORIZED PERSONNEL ONLY.	

Attachment 3

OEPA Approved Sampling and Analyses Plans

Preliminary Soil Sampling Work Plan
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: February 10, 2023

Purpose and Scope

Norfolk Southern Railway has developed the following plan to summarize the approach for preliminary soil sampling at the derailment site in East Palestine, Ohio (Site) that occurred on February 3, 2023 and resulted in releases of vinyl chloride, butyl acrylate, ethyl hexyl acrylate, 2-butoxyethyl acetate, ethylene glycol monobutyl ether acetate, lube oil, and isobutylene. This work plan is intended to guide preliminary soil sampling activities to evaluate site conditions and inform waste disposal activities. Two areas of the Site will be evaluated during this preliminary evaluation (Figure 1):

1. The area proximal to the five vinyl chloride cars that were on fire (Area 1)
2. The area between the western extent of Area 1 and the North Pleasant Drive crossing (Area 2)

Additionally, standing water and water within a stormwater sewer in the vicinity of Area 1 will be sampled.

Area 1

Three transects will be established with grab samples collected from the 0 to 0.5-foot below ground surface (bgs) interval:

- Transect A – North of the northern track
- Transect B – Between the two tracks
- Transect C – South of the southern tracks

The following protocol will be followed for sample collection and analysis from these three areas:

- A portion of each sample will be placed into new, single-use, sealed, zip-lock bags and held for a minimum of 10 minutes prior to headspace analysis with a photoionization device (PID) with a calibrated 10.6 electronvolt (eV) lamp.
- A portion of each sample will be collected for laboratory analysis of vinyl chloride per USEPA Method 8260.

Area 2

Three transects will be established:

- Transect D – North of the northern track

DRAFT
Privileged and Confidential

- Transect E – Between the two tracks
- Transect F – South of the southern tracks

The following protocol will be followed for sample collection and analysis from these three areas:

- A track-mounted GeoProbe® will be utilized to advance soil borings at sample locations spaced approximately 50 feet apart. The soil borings will be advanced to the depth of groundwater.
- Soil will be collected continuously during boring advancement for lithologic descriptions. Upon retrieval of the 4-foot soil core, the soil will be logged in 2-foot intervals and screened with a PID.
- A surface soil sample (0 to 2 feet bgs) taken from hand auger clearing cuttings will be collected for laboratory analysis of the analytical parameters indicated below.
- A subsurface soil sample with the highest PID from the 2 feet bgs to the depth of groundwater will be submitted for analysis. If PID readings are 0.0 throughout the boring, a sample from the 2-foot interval immediately above groundwater will be collected submitted for laboratory analysis.
- The samples will be analyzed for the parameters indicated below:
 - VOCs (USEPA Method 8260)
 - SVOCs (USEPA Method 8270)
 - Butyl acrylate (USEPA Method 8260)
 - Ethyl hexyl acrylate (USEPA Method 8260)
 - Methyl acrylate (USEPA Method 8260)
 - 2-butoxyethyl acetate (ethylene glycol mono butyl ether acetate) (USEPA Method 8270)

Standing Water and Stormwater

There are two pools of standing water to the south of Area 1. Two samples will be collected from the larger of the two pools, and one sample will be collected from the second, smaller pool. Additionally, one liquid sample will be collected from a stormwater sewer located near the northeast corner of the Ceram Fab building. The four liquid samples will be submitted to the laboratory for analysis of vinyl chloride per USEPA Method 8260. Additional sample volume from these locations will be collected for potential total VOC (USEPA Method 8260) and SVOC (USEPA Method 8270) analysis.

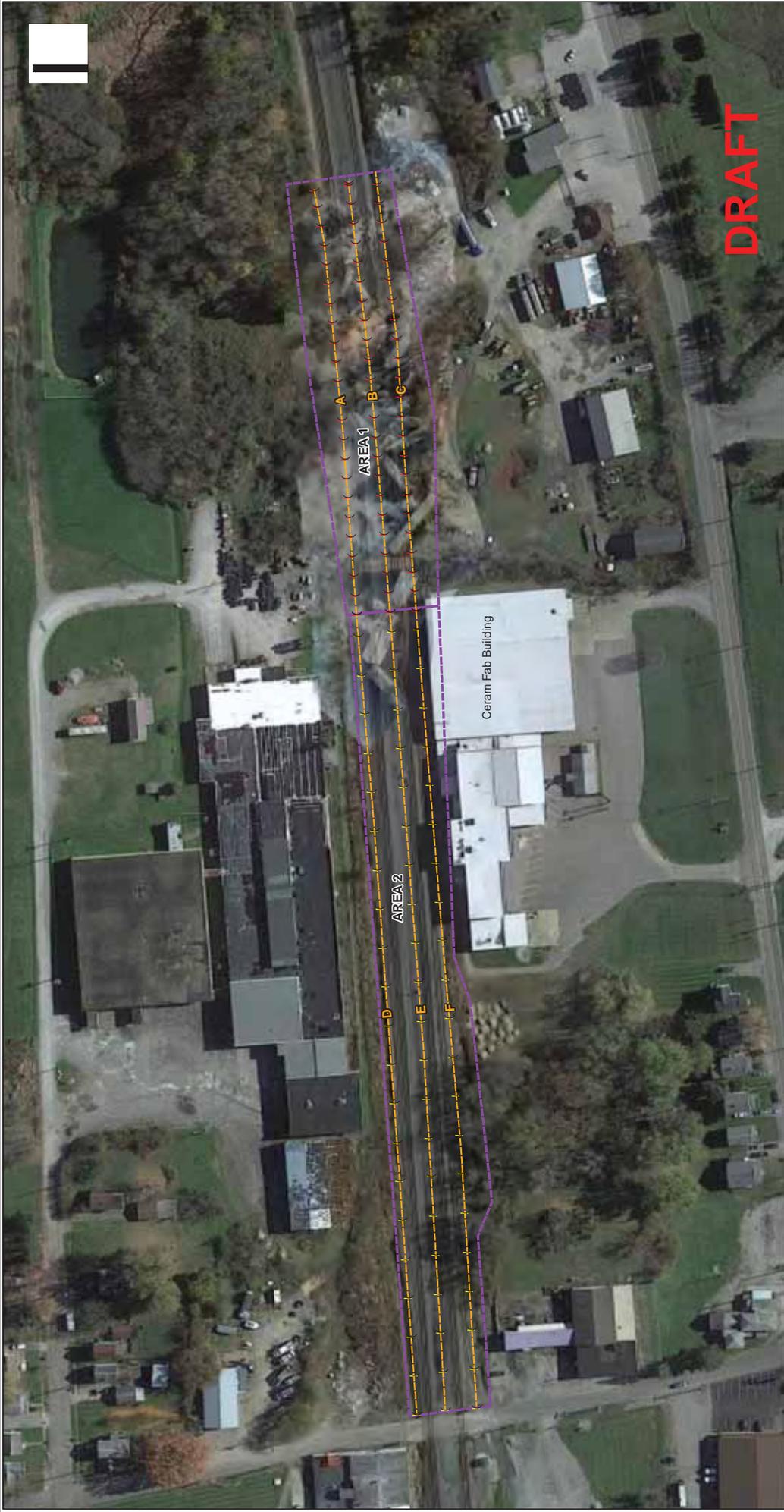
Sample Handling

Samplers will wear fresh nitrile gloves at each location and may be required to wear additional personal protective equipment (PPE). Sample locations will be recorded via GPS. Samples will be preserved in accordance with analytical method requirements, sealed in coolers, and couriered to Eurofins Environment Testing North Central of Barberton, Ohio laboratory under chain-of-

DRAFT
Privileged and Confidential

custody protocols and within specified holding times. Rush laboratory sample turn-around time will be requested.

DRAFT



NORFOLK SOUTHERN
EAST PALESTINE, OHIO

Preliminary Soil Sampling Plan

ARCADIS

FIGURE **1**

Legend

- Approximate extent of potential waste generation activities (Excavation)
- Sampling Transects
- Transect_Samples**
 - Area 1 Samples - 25 foot Interval
 - Area 2 Samples - 50 foot Interval

0 120 240
Feet

Services Layer Credits:

Preliminary Soil Sampling Work Plan
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: February 10, 2023

Please address the following comments being provided by Ohio EPA on the Preliminary Soil Sampling Work Plan dated February 10, 2023:

General comment

1. When sampling for volatile organic compounds (VOCs) in soil, U.S. EPA SW-846, Method 5035 should be used for sample acquisition and subsequent analysis, in conjunction with U.S. EPA SW-846, Method 8260.

Area 1

2. When collecting a grab sample for vinyl chloride analysis, an additional aliquot should be collected and held for future use for waste characterization purposes.
3. Preliminary assessment activities are requested to extend 250 feet east of the current Area 1 proposed boundary using the sampling protocol for Area 2. This area may be identified using a different designation.
4. Further assessment activities are requested after receipt of the vinyl chloride results. Please coordinate with Ohio EPA regarding future assessment activities.

Standing Water and Stormwater

5. As identified by Ohio EPA's Emergency Response Program, these accumulations of liquids were requested to be addressed through immediate removal. While still achieving this request, these liquids should be sampled prior to removal. In addition, these liquids should be segregated for subsequent characterization and management.

From: [Hunt, Daniel J](#)
To: Frank.Zingales@epa.ohio.gov; kurt.kollar@epa.ohio.gov; [Clayton, Michelle](#); [Grogan, Carolyn](#)
Cc: [Gernand, Matthew A.](#)
Subject: RE: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan
Date: Friday, February 10, 2023 2:07:11 PM
Attachments: [image001.png](#)

Frank,

Norfolk Southern has received the comments to the Preliminary Soil Sampling Plan and generally agrees with the comments. In response to comment 5 the night crew conducted oil removal from that ditch. The water will be allowed to recharge in that ditch and samples collected as outlined in the Work Plan. The water from that ditch has been placed in a dedicated frac tank. The sampling in the Vinyl Chloride Area will begin immediately.

Thanks
Dan Hunt

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



From: Frank.Zingales@epa.ohio.gov <Frank.Zingales@epa.ohio.gov>
Sent: Friday, February 10, 2023 1:48 PM
To: Hunt, Daniel J <Daniel.Hunt@nscorp.com>; kurt.kollar@epa.ohio.gov; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Subject: [EXTERNAL] RE: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Dan:

Please find attached Ohio EPA's comments on the Preliminary Soil Sampling Plan.

Please let me know if you would like to do a call concerning the comments, as well as confirm receipt of this email.

Regards, Frank

Frank Zingales, Environmental Specialist
Ohio EPA | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108

F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

From: Hunt, Daniel J <Daniel.Hunt@nscorp.com>
Sent: Friday, February 10, 2023 10:08 AM
To: Zingales, Frank <Frank.Zingales@epa.ohio.gov>; Kollar, Kurt <kurt.kollar@epa.ohio.gov>; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Cc: Gernand, Matthew A. <Matthew.Gernand@nscorp.com>
Subject: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Frank,

Attached is the Preliminary Soil Sampling Plan. Norfolk Southern is proposing to only collect Vinyl Chloride samples in the wreck area. After receipt of the data and discussions with OEPA we will decide on the TCLP sampling locations and frequency. The additional sampling outside of the wreck area will be conducted as discussed yesterday. We currently have a field sampling crew onsite and if we need to jump on a call to discuss the sampling plan please let me know.

Thanks
Dan Hunt

Daniel Hunt, P.G.
Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN
650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



CAUTION: This is an external email and may not be safe. If the email looks suspicious, please do not click links or open attachments and forward the email to csc@ohio.gov or click the Phish Alert Button if available.

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

From: [Hunt, Daniel J](#)
To: Frank.Zingales@epa.ohio.gov; kurt.kollar@epa.ohio.gov; [Clayton, Michelle](#)
Cc: [Gernand, Matthew A.](#); [Veira, E. Fitzgerald](#); [Artrip, Jason](#); [Grogan, Carolyn](#)
Subject: RE: East Palestine Ohio - NSRC - Preliminary Soil Sampling Plan Deviations
Date: Sunday, February 12, 2023 7:21:16 AM
Attachments: [image001.png](#)

Frank,

This email is to inform you of deviations from the Preliminary Soil Sampling Plan. The deviation referenced below were discussed with Karen Nesbit (USEPA) and Daniel Hunt (NS) in the field during the Area-2 Transect E drilling activities.

- During the drilling, a stiff mottled clay was observed below the railroad ballast. The clay was encountered less than two feet below grade across the investigation area. A small amount of perched water was typically observed above the clay in the ballast material. The clay extended to at least eight feet below ground surface (bgs). Although the sampling plan indicated terminating borings at the water table, because the clay appeared to be acting as a confining unit to any impacts in the above ballast material it was determined that the best course of action was to terminate the boring at eight feet while we were still in the clay. This would prevent any chance of potential downward migration of impacts should the clay layer be fully penetrated. Because the clay was so dense it was difficult to determine if the water table was encountered during the drilling.
- To help determine if the groundwater table was encountered during the drilling a temporary 1-inch piezometer was installed in borehole E2-14. The piezometer will be checked in the morning to determine if groundwater is present.
- Due to the presence of the interceptor trench some of the Transect E boring locations are currently inaccessible. Confirmation soil samples from these locations at the base of the excavation will be collected following soil removal actions.

Additional deviations that need to be discussed with OEPA is the location of transect D in Area 2. Due to the location of the north ditch the transect will need to be moved to the north side of the ditch to allow access for the drill rig.

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



From: Frank.Zingales@epa.ohio.gov <Frank.Zingales@epa.ohio.gov>
Sent: Friday, February 10, 2023 1:48 PM
To: Hunt, Daniel J <Daniel.Hunt@nscorp.com>; kurt.kollar@epa.ohio.gov; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Subject: [EXTERNAL] RE: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Dan:

Please find attached Ohio EPA's comments on the Preliminary Soil Sampling Plan.

Please let me know if you would like to do a call concerning the comments, as well as confirm receipt of this email.

Regards, Frank

Frank Zingales, Environmental Specialist
Ohio EPA | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108
F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

From: Hunt, Daniel J <Daniel.Hunt@nscorp.com>
Sent: Friday, February 10, 2023 10:08 AM
To: Zingales, Frank <Frank.Zingales@epa.ohio.gov>; Kollar, Kurt <kurt.kollar@epa.ohio.gov>; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Cc: Gernand, Matthew A. <Matthew.Gernand@nscorp.com>
Subject: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Frank,

Attached is the Preliminary Soil Sampling Plan. Norfolk Southern is proposing to only collect Vinyl Chloride samples in the wreck area. After receipt of the data and discussions with OEPA we will decide on the TCLP sampling locations and frequency. The additional sampling outside of the wreck area will be conducted as discussed yesterday. We currently have a field sampling crew onsite and if we need to jump on a call to discuss the sampling plan please let me know.

Thanks

Dan Hunt

Daniel Hunt, P.G.
Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN
650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



CAUTION: This is an external email and may not be safe. If the email looks suspicious, please do not click links or open attachments and forward the email to csc@ohio.gov or click the Phish Alert Button if available.

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

From: [Hunt, Daniel J](#)
To: Frank.Zingales@epa.ohio.gov; kurt.kollar@epa.ohio.gov; [Clayton, Michelle](#)
Cc: [Gernand, Matthew A.](#); [Veira, E. Fitzgerald](#); [Artrip, Jason](#); [Grogan, Carolyn](#)
Subject: RE: East Palestine Ohio - NSRC - Preliminary Soil Sampling Plan Deviations
Date: Sunday, February 12, 2023 7:21:19 AM
Attachments: [image001.png](#)

Frank,

This email is to inform you of deviations from the Preliminary Soil Sampling Plan. The deviation referenced below were discussed with Karen Nesbit (USEPA) and Daniel Hunt (NS) in the field during the Area-2 Transect E drilling activities.

- During the drilling, a stiff mottled clay was observed below the railroad ballast. The clay was encountered less than two feet below grade across the investigation area. A small amount of perched water was typically observed above the clay in the ballast material. The clay extended to at least eight feet below ground surface (bgs). Although the sampling plan indicated terminating borings at the water table, because the clay appeared to be acting as a confining unit to any impacts in the above ballast material it was determined that the best course of action was to terminate the boring at eight feet while we were still in the clay. This would prevent any chance of potential downward migration of impacts should the clay layer be fully penetrated. Because the clay was so dense it was difficult to determine if the water table was encountered during the drilling.
- To help determine if the groundwater table was encountered during the drilling a temporary 1-inch piezometer was installed in borehole E2-14. The piezometer will be checked in the morning to determine if groundwater is present.
- Due to the presence of the interceptor trench some of the Transect E boring locations are currently inaccessible. Confirmation soil samples from these locations at the base of the excavation will be collected following soil removal actions.

Additional deviations that need to be discussed with OEPA is the location of transect D in Area 2. Due to the location of the north ditch the transect will need to be moved to the north side of the ditch to allow access for the drill rig.

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



From: Frank.Zingales@epa.ohio.gov <Frank.Zingales@epa.ohio.gov>
Sent: Friday, February 10, 2023 1:48 PM
To: Hunt, Daniel J <Daniel.Hunt@nscorp.com>; kurt.kollar@epa.ohio.gov; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Subject: [EXTERNAL] RE: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Dan:

Please find attached Ohio EPA's comments on the Preliminary Soil Sampling Plan.

Please let me know if you would like to do a call concerning the comments, as well as confirm receipt of this email.

Regards, Frank

Frank Zingales, Environmental Specialist
Ohio EPA | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108
F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

From: Hunt, Daniel J <Daniel.Hunt@nscorp.com>
Sent: Friday, February 10, 2023 10:08 AM
To: Zingales, Frank <Frank.Zingales@epa.ohio.gov>; Kollar, Kurt <kurt.kollar@epa.ohio.gov>; Clayton, Michelle <michelle.clayton@arcadis.com>; Grogan, Carolyn <carolyn.grogan@arcadis.com>
Cc: Gernand, Matthew A. <Matthew.Gernand@nscorp.com>
Subject: East Palestine Ohio - NSRC - DRAFT - Preliminary Soil Sampling Plan

Frank,

Attached is the Preliminary Soil Sampling Plan. Norfolk Southern is proposing to only collect Vinyl Chloride samples in the wreck area. After receipt of the data and discussions with OEPA we will decide on the TCLP sampling locations and frequency. The additional sampling outside of the wreck area will be conducted as discussed yesterday. We currently have a field sampling crew onsite and if we need to jump on a call to discuss the sampling plan please let me know.

Thanks
Dan Hunt

Daniel Hunt, P.G.
Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN
650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



CAUTION: This is an external email and may not be safe. If the email looks suspicious, please do not click links or open attachments and forward the email to csc@ohio.gov or click the Phish Alert Button if available.

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

**Draft Soil Stockpile Sampling
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: February 13, 2023**

East Palestine OH Derailment - Waste Management Plan, adding PFAS/PFOA sampling

Call Notes:

In addition to commodities released by the derailment the local fire department has indicated that approximately 40 gallons of T-storm AFFF concentrate was utilized by the local fire department to control the fire, prior to NS arrival at the response site. The fire department is not able to provide the exact location where the AFFF was utilized. Based on the SDS (included in Attachment 1 of the WMP) and knowledge of the product this type of AFFF contains per- and polyfluoroalkyl substances known as PFAS and PFOA.

Based on the known release of a small volume of AFFF, the WMP has been amended to include PFAS/PFOA as potential COCs released to the environment as a result of response actions. The sampling plan for wastewater and soil will also be amended to include PFAS and PFOA as potential COCs. For PFAS we recommend EPA537 and EPA537(m) for liquids and solids. There are other methods, and Disposal Facilities have indicated that they will accept alternative methods as long as PFOS and PFOA are analyzed, at a minimum.

The sampling procedures for wastes will not be changed, each frac tank will be sampled individually and for the soil one composite sample will be collected per 100 CY for PFAS/PFOA. Analytical requirements associated with Site characterization and remediation will be addressed in the RAP, this memo is a working document and is specific to waste for offsite disposal only.

Based on discussions with disposal facilities, several of the proposed hazardous waste facilities (Texas Modular, US Ecology, WM Vickery Deep Well) have indicated that they will accept the water on the basis of the volume of AFFF used and the volume of water generated (calculated mass balance). For these facilities the profiles document that 40 gal AFFF 3%-6% concentrate was utilized during the initial response activities. By the end of the 1st week of response approximately 200K gallons of water (surface water and fire water) had been generated. A calculated value of 0.02% AFFF is listed on the composition of the wastewater profiles.

From: [Hunt, Daniel J](#)
To: [Clayton, Michelle](#)
Subject: FW: Hazardous waste transportation involving rail
Date: Tuesday, February 14, 2023 4:55:09 PM
Attachments: [image001.png](#)

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com
<https://jobs.nscorp.com/>



From: Frank.Zingales@epa.ohio.gov <Frank.Zingales@epa.ohio.gov>
Sent: Tuesday, February 14, 2023 3:44 PM
To: Hunt, Daniel J <Daniel.Hunt@nscorp.com>
Subject: [EXTERNAL] Hazardous waste transportation involving rail

Dan:

As I understand, Norfolk Southern is considering shipment of hazardous waste generated from this incident involving rail. In general, the hazardous waste would be pumped from a Frac tank at the incident site into a tanker truck and then transported over road (accompanied with a hazardous waste manifest as required by the applicable Ohio Administrative Code (OAC)). The transporter would then proceed to a rail siding and transfer the hazardous waste from the tanker truck to a rail tank car for final delivery to an authorized hazardous waste management facility. This transfer location at the rail siding would be a transfer facility as described in OAC rule 3745-50-10(T)(8). Transfer facility requirements are identified in OAC rule 3745-53-12.

Please see OAC rule 3745-53-20 which identifies manifest use requirements. In particular, please see OAC rule 3745-53-20(F) for shipments involving rail.

Additional compliance assistance information is available at:

Ohio EPA guidance document - Hazardous Waste Consolidation (see transfer facility):
https://epa.ohio.gov/static/Portals/32/pdf/Hazardous_Waste_Consolidation_Guidance.pdf

U.S. EPA interpretative letter regarding hazardous waste manifest use for transporters and transfer facilities (RO 11953): <https://rcrapublic.epa.gov/files/11953.pdf>

U.S. EPA interpretative letter regarding hazardous waste manifesting requirements applicable to rail transporters (RO 14791): <https://rcrapublic.epa.gov/files/14791.pdf>

Please contact me with any questions.

Frank Zingales, Environmental Specialist
Ohio EPA | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108
F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

Staging Pile Sampling Plan
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: February 17, 2023

Frank Zingales – Ohio Environmental Protection Agency

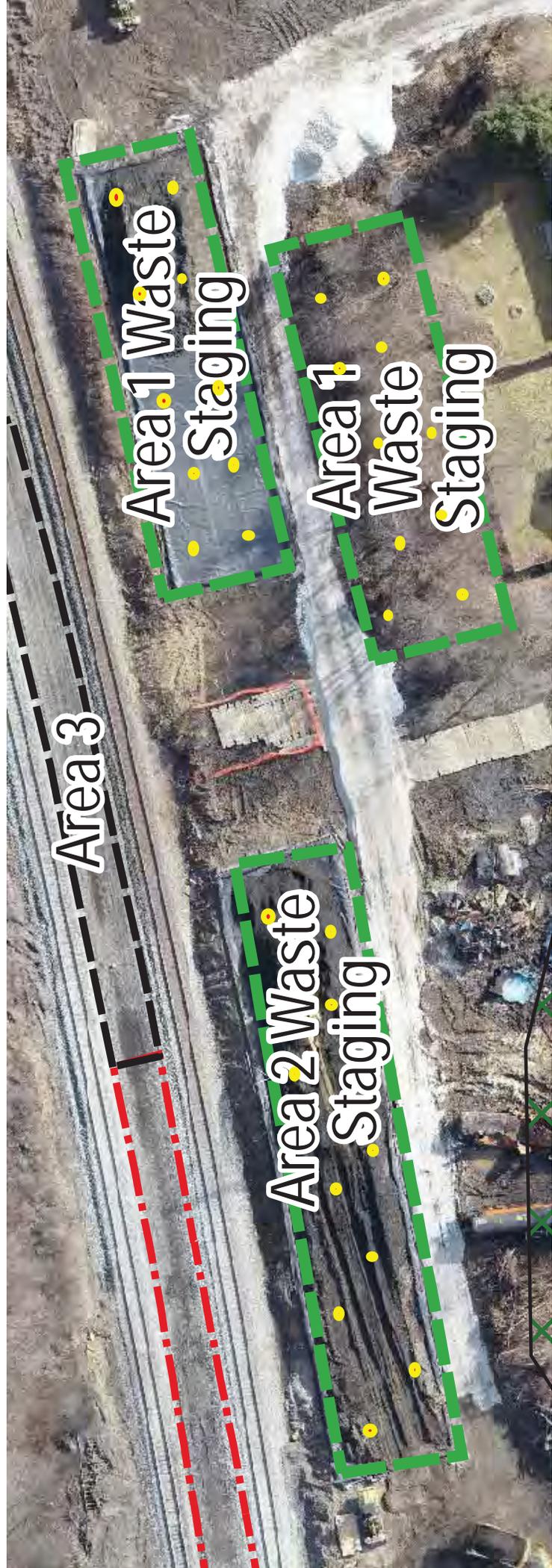
Michelle Clayton – Arcadis U.S., Inc.

This Staging Pile Sampling Plan documents the waste staging pile sampling procedures for the following five staging piles:

- Two stockpiles have been generated from the excavation of Investigation Area 1, Area 1 Waste Staging Area A and Area 1 Waste Staging Area B.
- Area 2 staging pile
- South Trench staging pile
- North staging pile

Samples will be collected as follows, for all waste staging piles.

- For the purpose of identifying underlying hazardous constituents (UHCs) and ensuring compliance with Universal Treatment Standards a total of 10 grab samples will be collected from each staging pile (see figure below). Samples will be collected at various depths within the staging piles, with a minimum depth of 12 inches below the surface. Sample depths will be incorporated into the sample identification listed on the Chain of Custody (i.e. WC-WS1-A1(3-4')).
- All grab samples will be submitted for total volatile organic compounds (VOCs), total semivolatile organic compounds (SVOCs), and toxicity characteristic leaching procedure (TCLP) metals.
- For the purpose of determining if the waste carries any characteristic waste codes the laboratory (Eurofins) will generate two 5-point composite samples for each staging pile. Compositing will be in accordance with laboratory approved procedures.
- Composite samples will be analyzed for: TCLP VOC, TCLP SVOC, TCLP pesticides/herbicides, and total polychlorinated biphenyls. One sample per staging pile will be analyzed for per- and polyfluoroalkyl substances (PFAS)/ perfluorooctanoic acid (PFOA).



- Proposed Sample Location (actual locations may be adjusted in the field)
Samples will be collected at various depths within the staging piles

From: [Hunt, Daniel J](#)
To: [Clayton, Michelle](#)
Subject: FW: East Palestine Derailment Roll Off Box Waste Sampling Plan
Date: Monday, February 20, 2023 5:49:13 PM
Attachments: [image001.png](#)

Michelle,

Please see Frank's comment below.

Thanks

Dan Hunt

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com

<https://jobs.nscorp.com/>



From: Frank.Zingales@epa.ohio.gov <Frank.Zingales@epa.ohio.gov>
Sent: Monday, February 20, 2023 5:12 PM
To: karen.nesbit@epa.ohio.gov; Hunt, Daniel J <Daniel.Hunt@nscorp.com>
Subject: [EXTERNAL] RE: East Palestine Derailment Roll Off Box Waste Sampling Plan

Dan:

To clarify regarding the North Ditch Soil. When the lab generates the two 5-point composite samples from the 10 grab samples collected, will they be run for TCLP VOC, TCLP SVOC, TCLP pesticides/herbicides, and total polychlorinated biphenyls (this would be consistent with the other sampling efforts)?

Thanks, Frank

Frank Zingales, Environmental Specialist
[Ohio EPA](#) | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108
F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

From: Nesbit, Karen <karen.nesbit@epa.ohio.gov>
Sent: Monday, February 20, 2023 4:32 PM
To: daniel.hunt@nscorp.com

Cc: Zingales, Frank <Frank.Zingales@epa.ohio.gov>

Subject: FW: East Palestine Derailment Roll Off Box Waste Sampling Plan

Dan,

The plan for the North Ditch roll-off boxes appears to be adequate with the following condition:

All boxes will be opened and field screened to determine if there are different VOC concentrations present in any of the boxes. If any boxes appear to be different from the other boxes, these should be sampled separately.

We would request additional time to consider the sampling plan for the pellets.

Regards

Karen

Karen L. Nesbit, Environmental Specialist

Ohio EPA | Division of Environmental Response and Revitalization

Northeast District Office

2110 E. Aurora Road

Twinsburg, OH 44087

P: (330) 963-1159

F: (330) 487-0769

[Ohio EPA DERR Program Information](#)

From: Zingales, Frank <Frank.Zingales@epa.ohio.gov>

Sent: Monday, February 20, 2023 3:27 PM

To: Nesbit, Karen <karen.nesbit@epa.ohio.gov>; Eyerdorn, Timothy <Timothy.Eyerdorn@epa.ohio.gov>; Oryshkewych, Natalie <Natalie.Oryshkewych@epa.ohio.gov>; Witherspoon, Melisa <Melisa.Witherspoon@epa.ohio.gov>

Subject: Fwd: East Palestine Derailment Roll Off Box Waste Sampling Plan

From: Hunt, Daniel J <Daniel.Hunt@nscorp.com>

Sent: Monday, February 20, 2023 3:13:15 PM

To: Zingales, Frank <Frank.Zingales@epa.ohio.gov>

Cc: Kollar, Kurt <kurt.kollar@epa.ohio.gov>; Gernand, Matthew A. <Matthew.Gernand@nscorp.com>

Subject: East Palestine Derailment Roll Off Box Waste Sampling Plan

Frank,

Below is a summary of the proposed sampling approach for the waste streams that were placed into roll-offs.

NORTH DITCH SOIL - All of the north Ditch soil was generated during the same excavation and will be managed as a single waste stream (i.e. stockpile). The north ditch soil is contained in 22 roll-off boxes.

- Arcadis will randomly select 10 of those boxes to collect the grab samples.
- Samples will be collected with a hand auger from various depths and locations within the roll-off boxes. All samples will be collected from a minimum of 12 inches depth.
- Consistent with the stockpile sampling approach, we will collect 10 grab samples for Total VOC, Total SVOC, TCLP metals (for the purpose of UHC/UTS compliance).
- The lab will generate two 5-point composite samples from the 10 grab samples collected.

PLASTIC PELLETS WITH SOME SOIL - There are 18 boxes of plastic pellets 6 boxes with plastic pellets and soil and (total of 24 boxes). The soil in the plastic pellet boxes was collected from the over excavation of the soil under the pellets.

- Arcadis will randomly select 10 of those boxes to collect the grab samples.
- Samples will be collected with a hand auger from various depths and locations within the roll-off boxes. All samples will be collected from a minimum of 12 inches depth.
- Consistent with the stockpile sampling approach, we will collect 10 grab samples for Total VOC, Total SVOC, TCLP metals (for the purpose of UHC/UTS compliance).
- The lab will generate two 5-point composite samples from the 10 grab samples collected.

Thanks

Dan Hunt

Daniel Hunt, P.G.

Regional Manager Environmental Remediation
404-273-4472

NORFOLK SOUTHERN

650 West Peachtree Street NW
Atlanta, GA 30308

www.norfolksouthern.com

<https://jobs.nscorp.com/>



CAUTION: This is an external email and may not be safe. If the email looks suspicious, please do not click links or open attachments and forward the email to csc@ohio.gov or click the Phish Alert Button if available.

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

From: Frank.Zingales@epa.ohio.gov
To: [Clayton, Michelle](mailto:Clayton.Michelle); daniel.hunt@nscorp.com
Subject: Waste Pile #4/South Side of RR Tracks
Date: Friday, February 24, 2023 7:41:09 PM

Dan/Michelle –

As communicated to me today, Waste Pile #4 (last pile to be generated on south side of RR tracks) will be sampled and analyzed using the same methodology as the other waste piles. The sampling methodology is identified in our email communications, including acknowledged comments, from February 17, 2023. As we are well aware, turnaround time (TAT) by the laboratory is critical to the continued off-site management of all wastes. Please use an expedited TAT for these samples.

Please contact me with any questions.

Frank Zingales, Environmental Specialist
Ohio EPA | Division of Environmental Response and Revitalization
Northeast District Office
2110 E. Aurora Road
Twinsburg, OH 44087
P: (330) 963-1108
F: (330) 487-0769
[Ohio EPA DERR Program Information](#)

Follow Us On:



How did we do? [Please take a few minutes to provide us with your feedback](#)

This email is intended for the sole use of the intended recipient and may contain privileged, sensitive or protected information. If you are not the intended recipient, be advised that the unauthorized use, disclosure, copying, distribution, or action taken in reliance on the contents of this communication is prohibited. If you have received this email in error, please notify the sender via telephone or return email and immediately delete this email.

South Track Stockpile Waste Sampling Plan
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: March 10, 2023

Attn: Hillary Young, Oklahoma Dept. Of Environmental Quality (OK DEQ)
Mike Edwards, OK DEQ
Kelly Dixon, OK DEQ
Jim Wilkins, OK DEQ
Paul Bratti, Clean Harbor
Alan Adair, Clean Harbor
Dan Hunt, Norfolk Southern

This Stockpile Sampling Plan documents the sampling procedures for the soil that was excavated from beneath the main line 1 - south track. Approximately 14,000 CY of soil was generated during the remedial activities. The soil is currently staged in a stockpile south of the track.

Samples will be collected as follows:

- For the purpose of identifying underlying hazardous constituents (UHCs) 14 grab samples will be collected. Horizontal sample locations will be randomly chosen. Sample depths will be a minimum of 12 inches below the surface. Sample depths will be incorporated into the sample identification listed on the Chain of Custody.
- All grab samples will be submitted for total volatile organic compounds (VOCs), total semivolatile organic compounds (SVOCs), and toxicity characteristic leaching procedure (TCLP) metals.
- For the purpose of determining if the waste exhibits any characteristic waste codes the laboratory (Eurofins) will generate two 7-point composite samples from the 14 grab samples. Compositing will be in accordance with laboratory approved procedures.
- Composite samples will be analyzed for: TCLP VOC, TCLP SVOC, TCLP pesticides/herbicides, and total polychlorinated biphenyls. One composite sample will be analyzed for dioxins/furans.

Attachment 4

Waste Generation Log and Applicable Regulations

No.	Container ID	Updated	Notes	Staging Site	Size	DTW (ft)	TD (ft)	Capacity2	%	4.6.23	4.7.23
1	512A	Updated	4.7.23 - SE 1704	ER Ceramics	21000	9.6	9.60	0.0	0%	-	-
2	526F	Updated	4.7.23 - SE 1705	ER Ceramics	21000	9.6	9.60	0.0	0%	1,677	-
3	548A	Updated	4.7.23 - SE 1703	ER Ceramics	21000	6.5	9.60	3.1	32%	2,224	6,781
4	585A	Updated	4.7.23 - SE 1654	South Track	21000	9.6	9.60	0.0	0%	-	-
5	256929	DO NOT USE	3.25.23 0.18 PPM VC SUSTAINED	Tank Farm 3	21000	8.40	8.67	0.3	3%	654	654
6	501B	PRODUCT	3.31.23 - GG PPE - TBD Sampled on 3.19.23	Tank Farm 3	21000	8.40	9.75	1.4	14%	2,908	2,908
7	251552	DEMOB	4.7.23 Demobilized - JG	Tank Farm 3	0	8.67	8.67	0.0	0%	-	-
8	251788	DO NOT USE	4.3.23 - SE Blocked off for cleaning.	Tank Farm 3	21000	8.67	8.67	0.0	0%	-	-
9	251799	DO NOT USE	4.3.2023 SE Red Tape	Tank Farm 3	21000	8.67	8.67	0.0	0%	-	-
10	256100	DO NOT USE	4.3.23 - SE CLEANING	Tank Farm 3	21000	9.83	9.83	0.0	0%	-	-
11	257390	DO NOT USE	4.3.23 - SE MESK CAP LEAKING 1450	Tank Farm 3	21000	8.42	8.67	0.3	3%	614	614
12	257393	DO NOT USE	4.3.23 - SE DO NOT LOAD	Tank Farm 3	21000	8.67	8.67	0.0	0%	-	-
13	266215	DO NOT USE	4.3.23 - Ladder is Broken	Tank Farm 3	21000	8.40	8.67	0.3	3%	654	654
14	266265	DEMOB	4.7.23 Demobilized - JG	Tank Farm 3	0	8.67	8.67	0.0	0%	-	-
15	251060	Updated	4.7.23 - MR 2254	Tank Farm 3	21000	8.67	8.67	0.0	0%	17,464	-
16	251079	Updated	4.7.23 - MR 2310	Tank Farm 3	21000	8.67	8.67	0.0	0%	557	-
17	251091	Updated	4.7.23 - MR 2309	Tank Farm 3	21000	9.83	9.83	0.0	0%	5,960	-
18	251321	Updated	4.7.23 - MR 2305	Tank Farm 3	21000	8.67	8.67	0.0	0%	8	8
19	251478	Updated	4.7.23 - MR 2304	Tank Farm 3	21000	8.67	8.67	0.0	0%	8	8
20	251633	Updated	4.7.23 - MR 2307	Tank Farm 3	21000	8.67	8.67	0.0	0%	-	-
21	251683	Updated	4.7.23 - MR 2306	Tank Farm 3	21000	8.67	8.67	0.0	0%	8	8
22	251782	Updated	4.7.23 - MR 0417	Tank Farm 3	21000	8.67	8.67	0.0	0%	4,651	-
23	252007	Updated	4.7.23 - MR 2313	Tank Farm 3	21000	8.67	8.67	0.0	0%	3,585	-
24	256094	Updated	4.7.23 - MR 2307	Tank Farm 3	21000	8.67	8.67	0.0	0%	8	8
25	257204	Updated	4.7.23 - MR 2253	Tank Farm 3	21000	8.67	8.67	0.0	0%	17,343	-
26	257400	Updated	4.7.23 - MR 2312	Tank Farm 3	21000	8.67	8.67	0.0	0%	242	-
27	265276	Updated	4.7.23 - MR 2308	Tank Farm 3	21000	8.67	8.67	0.0	0%	-	-
28	501F	Updated	4.7.23 - MR 2312	Tank Farm 3	21000	9.75	9.75	0.0	0%	-	-
29	507F	Updated	4.7.23 - MR 2257	Tank Farm 3	18000	9.83	9.83	0.0	0%	12,983	-
30	572A	Updated	4.7.23 - MR 2257	Tank Farm 3	21000	9.75	9.75	0.0	0%	17,942	-
31	574B	Updated	4.7.23 - MR 2249	Tank Farm 3	21000	8.92	9.75	0.8	9%	17,640	1,795
32	574D	Updated	4.7.23 - MR 2255	Tank Farm 3	18000	6.92	7.92	1.0	13%	12,500	2,280
33	AL4735	Updated	4.7.23 - MR 2248	Tank Farm 3	21000	9.75	9.75	0.0	0%	3,705	-
34	251362	DO NOT USE	4.6.23 - SE 1116	Tank Farm 3	21000	4.83	8.67	3.8	44%	9,293	9,293
35	251002	DO NOT USE	4.5.23 - MR 2208 Not accessible. Loose bolt on the tank ladder	Tank Farm 3	21000	2.48	8.67	6.2	71%	14,993	14,993
36	251026	Updated	4.7.23 - MR 0422	Tank Farm 3	21000	3.00	8.67	5.7	65%	13,564	13,734
37	251543	Updated	4.7.23 - MR 2234	Tank Farm 3	21000	2.17	8.67	6.5	75%	14,557	15,752
38	251650	Updated	4.7.23 - MR 2301	Tank Farm 3	21000	1.50	8.67	7.2	83%	16,543	17,367
39	251688	Updated	4.7.23 - MR 0416	Tank Farm 3	21000	4.83	8.67	3.8	44%	4,481	9,293
40	251694	Updated	4.7.23 - MR 2238	Tank Farm 3	21000	1.67	8.67	7.0	81%	16,010	16,963
41	251871	Updated	4.7.23 - MR 0424	Tank Farm 3	21000	2.08	8.67	6.6	76%	5,740	15,954
42	252651	Updated	4.7.23 - MR 0423	Tank Farm 3	21000	3.42	8.67	5.3	61%	12,740	12,724
43	253085	Updated	4.7.23 - MR 2314	Tank Farm 3	21000	5.92	8.67	2.8	32%	18,433	6,669
44	256043	Updated	4.7.23 - MR 2247	Tank Farm 3	21000	6.83	9.83	3.0	30%	16,535	6,402
45	256169	Updated	4.7.23 - MR 2236	Tank Farm 3	21000	2.33	8.67	6.3	73%	14,242	15,348
46	257225	Updated	4.7.23 - MR 2235	Tank Farm 3	21000	2.58	8.67	6.1	70%	13,612	14,743
47	257516	Updated	4.7.23 - MR 2233	Tank Farm 3	21000	2.08	8.67	6.6	76%	14,824	15,954
48	257761	Updated	4.7.23 - MR 0425	Tank Farm 3	21000	0.50	8.75	8.3	94%	3,120	19,800
49	257925	Updated	4.7.23 - MR 2224	Tank Farm 3	21000	2.17	8.67	6.5	75%	14,872	15,752
50	266384	Updated	4.7.23 - MR 0414	Tank Farm 3	21000	6.92	8.67	1.8	20%	3,512	4,247
51	511A	Updated	4.7.23 - MR 2302	Tank Farm 3	21000	1.42	9.83	8.4	86%	17,390	17,974
52	513A	Updated	4.7.23 - MR 0415	Tank Farm 3	21000	2.00	7.90	5.9	75%	10,766	15,684

No.	Container ID	Updated	Notes	Staging Site	Size	DTW (ft)	TD (ft)	Capacity2	%	4.6.23	4.7.23
53	521B	Updated	4.7.23 - MR 0419	Tank Farm 3	21000	1.67	9.83	8.2	83%	-	17,439
54	531A	DO NOT USE	4.5.23 - SE 1503 ACCESS LADDER BROKEN	Tank Farm 3	21000	2.83	9.60	6.8	71%	14,809	14,809
55	532A	Updated	4.7.23 - MR 0418	Tank Farm 3	21000	0.33	9.83	9.5	97%	16,279	20,288
56	537A	Updated	4.7.23 - MR 2241	Tank Farm 3	21000	1.50	9.75	8.3	85%	17,145	17,769
57	542C	Updated	4.7.23 - MR 2229	Tank Farm 3	21000	1.67	9.75	8.1	83%	15,960	17,410
58	560B	Updated	4.7.23 - MR 2244	Tank Farm 3	21000	1.75	9.83	8.1	82%	16,642	17,261
59	564B	Updated	4.7.23 - MR 2238	Tank Farm 3	21000	2.17	9.83	7.7	78%	15,681	16,371
60	566B	Updated	4.7.23 - MR 2259	Tank Farm 3	21000	2.25	9.83	7.6	77%	15,510	16,193
61	570E	Updated	4.7.23 - MR 2226	Tank Farm 3	16000	2.58	8.67	6.1	70%	10,261	11,233
62	573D	Updated	4.7.23 - MR 2228	Tank Farm 3	16000	2.58	7.92	5.3	67%	9,657	10,781
63	586A	Updated	4.7.23 - MR 2223	Tank Farm 3	21000	3.75	9.75	6.0	62%	15,012	12,923
64	592B	Updated	4.7.23 - MR 2231	Tank Farm 3	21000	1.67	9.75	8.1	83%	16,671	17,410
65	593D	Updated	4.7.23 - MR 2258	Tank Farm 3	21000	1.33	9.75	8.4	86%	17,446	18,128
66	AL4216	Updated	4.7.23 - MR 2245	Tank Farm 3	21000	1.83	9.75	7.9	81%	16,262	17,051
67	AL4710	Updated	4.7.23 - MR 2250	Tank Farm 3	21000	8.17	9.75	1.6	16%	16,175	3,410
68	AL4738	Updated	4.7.23 - MR 0416	Tank Farm 3	21000	2.00	9.75	7.8	79%	3,166	16,692
69	AL4754	Updated	4.7.23 - MR 0420	Tank Farm 3	21000	1.42	9.75	8.3	85%	18,028	17,949
70	AL4755	Updated	4.7.23 - MR 0421	Tank Farm 3	21000	1.00	9.75	8.8	90%	13,505	18,846
71	AL4771	Updated	4.7.23 - MR 0417	Tank Farm 3	21000	1.58	9.75	8.2	84%	3,640	17,590
72	AL4787	Updated	4.7.23 - MR 2251	Tank Farm 3	21000	2.08	9.75	7.7	79%	16,865	16,513
73	AL4944	Updated	4.7.23 - MR 2242	Tank Farm 3	21000	1.75	9.75	8.0	82%	16,391	17,231
74	AL5484	Updated	4.7.23 - MR 2250	Tank Farm 3	21000	8.17	9.75	1.6	16%	17,080	3,410
75	AL5645	Updated	4.7.23 - MR 2300	Tank Farm 3	21000	1.33	9.75	8.4	86%	17,532	18,128
76	AL5679	Updated	4.7.23 - MR 2223	Tank Farm 3	21000	1.75	9.75	8.0	82%	16,326	17,231
77	251369	Updated	4.7.23 - MR 0120	Tank Farm 4	21000	1.3333	9.60	8.3	86%	18,266	18,083
78	251406	Updated	4.7.23 - MR 0120	Tank Farm 4	21000	0.8333	9.60	8.8	91%	18,995	19,177
79	257165	Updated	4.7.23 - MR 0119	Tank Farm 4	21000	2.1667	9.60	7.4	77%	14,802	16,260
80	547E	Updated	4.7.23 - MR 0114	Tank Farm 4	21000	2.0833	9.60	7.5	78%	15,714	16,443
81	553B	Updated	4.7.23 - MR 0121	Tank Farm 4	21000	0.8333	9.60	8.8	91%	19,542	19,177
82	257271	Updated	4.7.23 - MR 0121	Tank Farm 4	21000	1.75	9.60	7.9	82%	16,990	17,172
83	265552	Updated	4.7.23 - MR 0119	Tank Farm 4	21000	2.5	9.60	7.1	74%	16,260	15,531
84	514D	Updated	4.7.23 - MR 0111	Tank Farm 4	21000	2.25	9.60	7.4	77%	15,714	16,078
85	529D	Updated	4.7.23 - MR 0115	Tank Farm 4	21000	1.25	9.60	8.4	87%	17,719	18,266
86	530F	Updated	4.7.23 - MR 0112	Tank Farm 4	21000	2	9.60	7.6	79%	16,443	16,625
87	539A	Updated	4.7.23 - MR 0118	Tank Farm 4	21000	2.1667	9.60	7.4	77%	15,714	16,260
88	541B	Updated	4.7.23 - MR 0113	Tank Farm 4	21000	2.1667	9.60	7.4	77%	16,078	16,260
89	553A	Updated	4.7.23 - MR 0117	Tank Farm 4	21000	1.25	9.60	8.4	87%	17,901	18,266
90	562C	Updated	4.7.23 - MR 0117	Tank Farm 4	21000	1.25	9.60	8.4	87%	17,901	18,266
91	571B	Updated	4.7.23 - MR 0115	Tank Farm 4	21000	1.25	9.60	8.4	87%	17,901	18,266
92	578D	Updated	4.7.23 - MR 0116	Tank Farm 4	21000	1.25	9.60	8.4	87%	18,448	18,266
93	252656	DO NOT FILL	4.3.23 LD @ 1954 Per NS email Clean and Out of Service	Tank Farm 5	21000	9.6	9.60	0.0	0%	-	-
94	256709	DO NOT FILL	4.3.23 LD @ 1954 Per NS email Clean and Out of Service	Tank Farm 5	21000	9.6	9.60	0.0	0%	-	-
95	251014	Updated	4.7.23 - MR 0426	Tank Farm 5	21000	9.60	9.60	0.0	0%	18,083	-
96	255950	Updated	4.7.23 - MR 0208	Tank Farm 5	21000	9.60	9.60	0.0	0%	-	-
97	257019	Updated	4.7.23 - MR 0426	Tank Farm 5	21000	9.60	9.60	0.0	0%	18,083	-
98	266240	Updated	4.7.23 - MR 0209	Tank Farm 5	21000	9.60	9.60	0.0	0%	-	-
99	555D	Updated	4.7.23 - MR 0201	Tank Farm 5	21000	9.60	9.60	0.0	0%	18,448	-
100	257728	Updated	4.7.23 - MR 0210	Tank Farm 5	21000	8.50	8.50	0.0	0%	-	-
101	260119	Updated	4.7.23 - MR 0202	Tank Farm 5	21000	9.60	9.60	0.0	0%	17,172	-
102	508C	Updated	4.7.23 - MR 0141 DECON FRAC ONLY	Tank Farm 5	21000	9.60	9.60	0.0	0%	3,135	-
103	516F	Updated	4.7.23 - MR 0214	Tank Farm 5	21000	9.6	9.60	0.0	0%	16,078	-
104	538B	Updated	4.7.23 - MR 0211	Tank Farm 5	21000	9.50	9.50	0.0	0%	-	-
105	540A	Updated	4.7.23 - MR 0142 ROPED OFF DECON FRAC ONLY	Tank Farm 5	21000	9.00	9.60	0.6	6%	17,901	1,313

No.	Container ID	Updated	Notes	Staging Site	Size	DTW (ft)	TD (ft)	Capacity2	%	4.6.23	4.7.23
106	566E	Updated	4.7.23 - MR 0212	Tank Farm 5	21000	7.50	7.50	0.0	0%	700	-
107	251320	Updated	4.7.23 - MR 0207	Tank Farm 5	21000	2.92	9.60	6.7	70%	-	14,620
108	256729	Updated	4.7.23 - MR 0425	Tank Farm 5	21000	1.67	9.60	7.9	83%	-	17,354
109	251076	Updated	4.7.23 - MR 0142	Tank Farm 5	21000	0.00	9.60	9.6	100%	21,000	21,000
110	251158	Updated	4.7.23 - MR 0158	Tank Farm 5	21000	2.58	9.60	7.0	73%	15,167	15,349
111	253177	Updated	4.7.23 - MR 0155	Tank Farm 5	21000	0.58	8.50	7.9	93%	19,353	19,559
112	256160	Updated	4.7.23 - MR 0141 DECON WATER	Tank Farm 5	21000	2.08	8.50	6.4	75%	17,912	15,853
113	256185	Updated	4.7.23 - MR 0200	Tank Farm 5	21000	1.75	9.60	7.9	82%	16,990	17,172
114	257195	Updated	4.7.23 - MR 0143	Tank Farm 5	21000	0.00	9.60	9.6	100%	21,000	21,000
115	257410	Updated	4.7.23 - MR 0143	Tank Farm 5	21000	0.00	9.60	9.6	100%	21,000	21,000
116	257414	Updated	4.7.23 - MR 0153	Tank Farm 5	21000	1.75	9.60	7.9	82%	16,625	17,172
117	257482	Updated	4.7.23 - MR 0156	Tank Farm 5	21000	1.83	8.40	6.6	78%	16,417	16,417
118	265065	Updated	4.7.23 - MR 0156	Tank Farm 5	21000	1.33	8.50	7.2	84%	17,706	17,706
119	266313	Updated	4.7.23 - MR 0159	Tank Farm 5	21000	3.17	9.60	6.4	67%	13,891	14,073
120	505B	Updated	4.7.23 - MR 0150	Tank Farm 5	21000	3.58	9.60	6.0	63%	12,979	13,161
121	513C	Updated	4.7.23 - MR 0157 Note: Container material appears unusually thick	Tank Farm 5	21000	0.9167	9.60	8.7	90%	17,172	18,995
122	514E	Updated	4.7.23 - MR 0215	Tank Farm 5	16000	3.5	9.60	6.1	64%	13,778	10,167
123	515B	Updated	4.7.23 - MR 0150	Tank Farm 5	21000	2.75	9.60	6.9	71%	14,802	14,984
124	538F	Updated	4.7.23 - MR 0144	Tank Farm 5	21000	1.58	9.40	7.8	83%	18,766	17,463
125	552A	Updated	4.7.23 - MR 0148	Tank Farm 5	21000	1.67	9.60	7.9	83%	17,354	17,354
126	558F	Updated	4.7.23 - MR 0152	Tank Farm 5	21000	3.00	9.60	6.6	69%	14,802	14,438
127	559B	Updated	4.7.23 - MR 0151	Tank Farm 5	21000	3.00	9.60	6.6	69%	14,438	14,438
128	577D	Updated	4.7.23 - MR 0213	Tank Farm 5	16000	4.58	7.50	2.9	39%	6,222	6,222
129	598B	Updated	4.7.23 - MR 0154	Tank Farm 5	21000	0.83	9.60	8.8	91%	18,995	19,177
130	598D	Updated	4.7.23 - MR 0453	Tank Farm 6	21000	9.6	9.60	0.0	0%	-	-
131	251766	Updated	4.7.23 - MR 0434	Tank Farm 6	21000	9.60	9.60	0.0	0%	3,763	-
132	256104	Updated	4.7.23 - MR 0451	Tank Farm 6	21000	9.60	9.60	0.0	0%	9,231	-
133	501C	Updated	4.7.23 - MR 0454	Tank Farm 6	21000	9.6	9.60	0.0	0%	-	-
134	502D	Updated	4.7.23 - MR 0454	Tank Farm 6	21000	9.60	9.60	0.0	0%	-	-
135	512C	Updated	4.7.23 - MR 0437	Tank Farm 6	21000	8.50	9.60	1.1	11%	1,772	2,406
136	512E	Updated	4.7.23 - MR 0452	Tank Farm 6	16000	9.60	9.60	0.0	0%	3,950	-
137	536E	Updated	4.7.23 - MR 0445	Tank Farm 6	21000	9.17	9.60	0.4	5%	-	948
138	538A	Updated	4.7.23 - MR 0453	Tank Farm 6	21000	9.6	9.60	0.0	0%	-	-
139	539C	Updated	4.7.23 - MR 0455	Tank Farm 6	21000	9.60	9.60	0.0	0%	-	-
140	558E	Updated	4.7.23 - MR 0438	Tank Farm 6	21000	8.75	9.60	0.9	9%	4,966	1,859
141	559F	Updated	4.7.23 - MR 0456	Tank Farm 6	21000	9.60	9.60	0.0	0%	-	-
142	560F	Updated	4.7.23 - MR 0455	Tank Farm 6	21000	9.60	9.60	0.0	0%	-	-
143	251692	Updated	4.7.23 - MR 0449	Tank Farm 6	21000	1.75	9.60	7.9	82%	17,063	17,172
144	253326	Updated	4.7.23 - MR 0446	Tank Farm 6	21000	1.83	9.60	7.8	81%	17,019	16,990
145	256193	Updated	4.7.23 - MR 0444	Tank Farm 6	21000	1.42	9.60	8.2	85%	17,719	17,901
146	265364	Updated	4.7.23 - MR 0447	Tank Farm 6	21000	0.92	9.60	8.7	90%	18,878	18,995
147	266387	Updated	4.7.23 - MR 0450	Tank Farm 6	21000	0.92	9.60	8.7	90%	18,900	18,995
148	505E	Updated	4.7.23 - MR 0433	Tank Farm 6	16000	7.08	9.60	2.5	26%	4,667	4,194
149	522D	Updated	4.7.23 - MR 0449	Tank Farm 6	21000	2.67	9.60	6.9	72%	15,466	15,167
150	525F	Updated	4.7.23 - MR 0445	Tank Farm 6	21000	1.67	9.60	7.9	83%	17,259	17,354
151	552B	Updated	4.7.23 - MR 0448	Tank Farm 6	21000	6.25	9.60	3.4	35%	17,938	7,328
152	559D	Updated	4.7.23 - MR 0442	Tank Farm 6	16000	6.75	8.40	1.7	20%	3,105	3,143
153	590D	Updated	4.7.23 - MR 0441	Tank Farm 6	16000	7.08	8.40	1.3	16%	3,086	2,508
154	566A	Updated	4.7.23 - SE 1704	Washington St	21000	9.6	9.60	0.0	0%	-	-
155	0114A	Updated	4.7.23 - SE 1704	WWTP	10000	3.5	3.50	0.0	0%	-	-
Total	155				3,156,000				45%	1,599,733	1,445,772

No.	Container ID	Updated	Notes	Staging Site	Size	DTW (ft) TD (ft)	Capacity2	%	4.6.23	4.7.23
-----	--------------	---------	-------	--------------	------	------------------	-----------	---	--------	--------

Total Volume (gal)	Total Capacity (gal)	% Utilized
1,445,772	3,156,000	45%

PRODUCT/DO NOT USE or FILL	DEMOB	Readings Updated
13	2	142

Full (100-85%)	Partial (85-15%)	Empty (15-0%)	Unknown If Reading is Accurate
24	70	61	4

Total Tanks	Usable Tanks
155	116

Inventory for Tank Farm 3 completed as of 01:00 3/25/23
 Inventory for Roll-Off area completed as of 05:30 03/25/23

Inventory for TF3 & TF6 complete as of 17:45 on 4/7/23

No.	Container ID	Staging Site	Status	Waste Profile Name	Waste Description	Notes	Last Date Inspected
1	SB2593	Ceramics Parking Lot	Partial	Street Sweepings	Dirt and Street Sweepings		3/29/2023 SMI
2	RT5046	North Track/State Line Warehouse	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
3	RT5282	South Track near HEPCO	Full	Municipal Trash	Municipal Trash		3/29/2023 SMI
4	RT1588A	Taggart Near Truck Wash/Parking Lot	Partial	Street Sweepings	Street Sweepings		3/29/2023 SMI
5	SB1450	Tank Farm 5	Full	Debris	Impacted Absorbents & Debris (Booms & pads)		3/29/2023 SMI
6	SB1905	Tank Farm 5	Full	Debris	Booms & Pads		3/29/2023 SMI
7	SB1028	Tank Farm 5	Full	Debris	Insulation		3/29/2023 SMI
8	SB2446	Tank Farm 5	Partial	Debris	Booms & Pads		3/29/2023 SMI
9	SB1167	Tank Farm 5	Full	Debris	PPE & Absorbents		3/29/2023 SMI
10	SB2412	Tank Farm 5	Full	Debris	Absorbents & Debris + municipal trash		3/29/2023 SMI
11	SB1395	Tank Farm 5	Full	Debris	Municipal trash and dirt		3/29/2023 SMI
12	SB2665	Tank Farm 5	Full	Debris	Municipal trash and corrugated tubing		3/29/2023 SMI
13	SB2462	Tank Farm 5	Full	Debris	Absorbents and Dirt		3/29/2023 SMI
14	SB2367	Tank Farm 5	Full	Debris	Booms & Pads		3/29/2023 SMI
15	SB2521	Tank Farm 5	Full	Debris	Municipal Trash and dirt		3/29/2023 SMI
16	SB1833	Tank Farm 5	Full	Debris	Absorbents & Municipal Trash		3/29/2023 SMI
17	RT2281	Tank Farm 5	Full	Debris	Street-sweeping Debris, Trash and large quantities of water	LARGE QUANTITY OF LIQUID	3/29/2023 SMI
18	SB2445	Tank Farm 5	Full	Debris	Dirt, Plastic and Ballast		3/29/2023 SMI
19	SB1521	Tank Farm 5	Full	Debris	Booms and Pads		3/29/2023 SMI
20	SB2626	Tank Farm 5	Full	Debris	Absorbents & Debris		3/29/2023 SMI
21	SB1962	Tank Farm 5	Full	Debris	Absorbents and Municipal Trash		3/29/2023 SMI
22	SB1860	Tank Farm 5	Full	Debris	Wood debris and flour bags		3/29/2023 SMI
23	SB1055	Tank Farm 5	Full	Debris	Hay and Dirt		3/29/2023 SMI
24	SB2536	Tank Farm 5	Full	Debris	Municipal Trash		3/29/2023 SMI
25	SB2500	Tank Farm 5	Full	Debris	Absorbents		3/29/2023 SMI
26	RT1783	Tank Farm 5	Full	Debris	Metal Fencing and Dirt		3/29/2023 SMI
27	RT3244	Tank Farm 5	Full	Debris	Secondary conainment		3/29/2023 SMI
28	RT4726	Tank Farm 5	Full	Debris	Tires, Dirt, Fencing and Trees		3/29/2023 SMI
29	RT4509	Tank Farm 5	Full	Debris	Dirt, Trash, and water	A LOT OF SEDIMENT AND LARGE AMOUNT OF LIQUID	3/29/2023 SMI
30	SB2454	Tank Farm 5	Full	Debris	Insulation and Dirt		3/29/2023 SMI
31	RT5283	Tank Farm 5	Full	Debris	Secondary Containment		3/29/2023 SMI
32	SB2354	Tank Farm 5	Partial	Debris	Wood & Metal sheets		3/29/2023 SMI
33	SB1847	Tank Farm 5	Partial	Debris	Trash, booms + pads		3/29/2023 SMI
34	SB2418	Tank Farm 5	Partial	Debris	Impacted Absorbents & Debris		3/29/2023 SMI
35	SB1299	Tank Farm 5	Partial	Debris	Secondary conainment		3/29/2023 SMI
36	SB1263	Tank Farm 5	Partial	Debris	Municipal Trash		3/29/2023 SMI
37	SB1486	Tank Farm 5	Partial	Debris	Hay and Dirt		3/29/2023 SMI
38	SB2588	Tank Farm 5	Partial	Debris	Absorbents and PPE		3/29/2023 SMI
39	AJVB-225	Tank Farm 5	Full	Ethyl Hexy Acrylate	Ethyl Hexyl Acrylate		3/29/2023 SMI
40	SB2406	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
41	VB1190	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
42	VB1281	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
43	SB2119	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
44	VB1110	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
45	SB1597	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
46	SB2116	Tank Farm 5	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
47	SB1608	Tank Farm 5	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
48	DVB1420	Tank Farm 5	Empty	N/A - EMPTY	--		3/29/2023 SMI
49	SB1226	Tank Farm 5	Empty	N/A - EMPTY	--	NEEDS CLEANING	3/29/2023 SMI
50	SB1621	Tank Farm 5	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
51	RT3117	Tank Farm 5	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
52	RT5362	Tank Farm 5	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
53	RT5385	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
54	RT5417	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
55	RT5403	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
56	RT5390	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
57	RT5416	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
58	SB1085	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023

No.	Container ID	Staging Site	Status	Waste Profile Name	Waste Description	Notes	Last Date Inspected
59	RT5409	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
60	SB1968	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
61	RT5406	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
62	RT5414	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
63	RT5367	Tank Farm 5		Non-Friable ACM, Debris & soil	ACM, Debris & Soil		4/1/2023
64	SB1056	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
65	SB2636	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
66	SB1841	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
67	SB1252	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
68	SB1855	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
69	SB2477	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
70	SB1465	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
71	SB1032	Tank Farm 5	Full	Plastic Pellets & Soil	Melted Plastic		3/29/2023 SMI
72	SB1850	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
73	SB1985	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
74	SB1707	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
75	SB1566	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
76	SB2461	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
77	SB1612	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
78	DSB2468	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
79	SB2325	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
80	SB2224	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
81	VB1328	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
82	279363	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
83	VB1319	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
84	VB1108	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
85	VB1344	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
86	VB1254	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
87	VB1402	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
88	VB1284	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
89	VB1403	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
90	SB1886	Tank Farm 5	Full	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
91	VB1337	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
92	VB1184	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
93	280784	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
94	DVB1321	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
95	279404	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
96	VB1350	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
97	VB1264	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets		3/29/2023 SMI
98	SB1505	Tank Farm 5	Full	Plastic Pellets & Soil	Municipal Trash		3/29/2023 SMI
99	SB1050	Tank Farm 5	Full	Plastic Pellets & Soil	Plastic Pellets and Dirt		3/29/2023 SMI
100	SB1340	Tank Farm 5	Partial	Plastic Pellets & Soil	Dirt & Plastic Pellets		3/29/2023 SMI
101	DSB1811	Tank Farm 5	Partial	Plastic Pellets & Soil	Municipal Trash and Dirt		3/29/2023 SMI
102	SB1921	Tank Farm 5	Partial	Plastic Pellets and Soil	Plastic Pellets, Ballast and Dirt		3/29/2023 SMI
103	DSB1809	Tank Farm 5	Partial	Soil < LDR	Rock		3/29/2023 SMI
104	SB1511	Tank Farm 5	Full	Soil < LDR	5-25% Absorbants, 50-75% N Ditch Dirt and 10-25% Wood		3/29/2023 SMI
105	SB2474	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
106	SB1502	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
107	SB2455	Tank Farm 5	Partial	Soil < LDR	Drill Cuttings		3/29/2023 SMI
108	SB1188	Tank Farm 5	Full	Soil < LDR	Dirt & Ballast		3/29/2023 SMI
109	SB2405	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
110	SB2475	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
111	SB1051	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
112	SB1623	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
113	SB1634	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
114	SB1213	Tank Farm 5	Full	Soil < LDR	Dirt & Rock		3/29/2023 SMI
115	SB1305	Tank Farm 5	Full	Soil < LDR	Dirt & Rock		3/29/2023 SMI
116	SB1865	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
117	SB2538	Tank Farm 5	Partial	Soil < LDR	Dirt		3/29/2023 SMI
118	SB2407	Tank Farm 5	Full	Soil < LDR	Dirt & Rock		3/29/2023 SMI
119	SB2634	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
120	SB1022	Tank Farm 5	Partial	Soil < LDR	Dirt and Trash		3/29/2023 SMI
121	SB2413	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
122	AJMU112	Tank Farm 5	Full	Soil < LDR	Dirt & Asphalt		3/29/2023 SMI
123	RT4635	Tank Farm 5	Full	Soil < LDR	Dirt & Asphalt		3/29/2023 SMI
124	SB2621	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
125	SB2598	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt + Debris		3/29/2023 SMI
126	SB1618	Tank Farm 5	Partial	Soil < LDR	Dirt		3/29/2023 SMI
127	SB1721	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
128	SB2655	Tank Farm 5	Partial	Soil < LDR	Dirt & trash		3/29/2023 SMI
129	SB2056	Tank Farm 5	Partial	Soil < LDR	Dirt		3/29/2023 SMI

No.	Container ID	Staging Site	Status	Waste Profile Name	Waste Description	Notes	Last Date Inspected
130	SB1692	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
131	SB1852	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
132	RT1587	Tank Farm 5	Partial	Soil < LDR	Ballast and Dirt		3/29/2023 SMI
133	SB2624	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
134	SB1798	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
135	SB2650	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
136	SB1799	Tank Farm 5	Full	Soil < LDR	N Ditch Dirt		3/29/2023 SMI
137	SB1753	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
138	SB2526	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
139	SB2648	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
140	SB1702	Tank Farm 5	Full	Soil < LDR	Dirt and wood debris		3/29/2023 SMI
141	SB1046	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
142	RT2614	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
143	RT4241	Tank Farm 5	Full	Soil < LDR	Dirt, Ballast and Debris		3/29/2023 SMI
144	RT1597	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
145	SB1504	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
146	RB21203	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
147	RB2929	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
148	RT5026	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
149	RT4428	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
150	RT4533	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
151	RT5043	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
152	RT1605A	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
153	RT1658	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
154	RT2843	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
155	RT3114	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
156	RT2639	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
157	RT2636	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
158	RT4583	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
159	RT5284	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
160	RT2658	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
161	RT5049	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
162	RT4442	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
163	RT4216	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
164	RT3103	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
165	RT4725	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
166	RT4007	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
167	RT1599	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
168	RT4521	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
169	RT4424	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
170	SB1826	Tank Farm 5	Full	Soil < LDR	Dirt		3/29/2023 SMI
171	RT4725	Tank Farm 5	Full	Soil < LDR	Contaminated Dirt		3/29/2023 SMI
172	RT5358	Tank Farm 6	Full	Debris	Absorbants and Dirt		3/29/2023 SMI
173	RT1608	Tank Farm 6	Full	Debris	Hay and Absorbants		3/29/2023 SMI
174	RT4517	Tank Farm 6	Empty	N/A - EMPTY	--	NEEDS CLEANING	3/29/2023 SMI
175	RT5396	Tank Farm 6	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
176	RT5364	Tank Farm 6	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
177	SB1946	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
178	DSB1754	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
179	SB2234	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
180	SB1217	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
181	SB2469	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
182	RT1785	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
183	RT5129	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
184	SB1121	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
185	RT4226	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
186	RT3079	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
187	RT624	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
188	RT3454	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
189	RT4414	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
190	RT4228	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
191	RT4534	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
192	RT2291	Tank Farm 6	Full	Soil < LDR	Dirt		3/29/2023 SMI
193	RT5379	Two Gallon Tank Area	Empty	N/A - EMPTY	--	CLEAN	3/29/2023 SMI
194	SB1509	Unknown Location	Unknown		--		--
195	SB1112	Unknown Location	Unknown		--		--
196	DSB1809	Unknown Location	Unknown		--		--
197	DB1022	Unknown Location	Unknown		--		--
198	RT4517	Unknown Location	Unknown		--		--

Full (100-85%) 143	Partial (85-15%) 21	Empty (15-0%) 18
--------------------------	---------------------------	------------------------

Total Roll-Offs 193	Usable Roll-Offs 143
---------------------------	-------------------------

Inventory completed as of 19:12 on 4/01/23

Attachment 5

Waste Transportation and Disposal Log

SOLID WASTE, HAZARDOUS										
STATE	DISPOSAL FACILITY	ADDRESS	CERCLA APPROVED	PROFILE STATUS	ID NUMBER	# OF LOADS 04/07/2023	SHIPPED 04/07/2023 (tons)	SHIPPED TO DATE (tons)	NOTES	COMMENTS
OH	Ross Incineration Services (Incineration)	36790 Giles Rd, Grafton, OH 44044	Y	approved	OHD48415665	3	67	1,749	Start Shipping on 02/28	
OH	Heritage Thermal Services (Incineration)	1250 Saint George St, East Liverpool, OH 43920	Y	approved	OHD980613541	2	41	1,986	Start shipping on 2/27	
IN	Heritage Environmental Services, LLC (Landfill)	4370 W. County Road 1275, North Roachdale IN	Y	approved	IND980503890	19	444	14,387	Start Shipping on 02/28	
CO	Clean Harbors Deer Trail LLC (Landfill)	108555 East Highway 36 Deer Trail, CO 80105	Y	approved	COD991300484	2	44	887	Start Shipping on 03/24	
TX	Waste Control Specialists	9998 West, TX-176 Andrews, TX 79714	Y	approved	TXD988088464	8	179	243	Start Shipping on 04/05	
OK	Clean Harbor Lone Mountain (Landfill)	40355 S. County Road 236, Waynoka, OK 73860	Y	approved	OKD065438376	-	-	-	Start shipping on 3/11	Stopped shipping 3/12, all loads returned to site
MI	US Ecology Wayne disposal Inc (Landfill)	49364 North 194 Service Drive Belleville, MI 48111	Y	approved	MID048090646	-	-	440		
Totals						34	775	19,692		

LIQUID WASTE, HAZARDOUS										
STATE	DISPOSAL FACILITY	ADDRESS	CERCLA APPROVED	PROFILE STATUS	ID NUMBER	# OF LOADS 04/07/2023	SHIPPED 04/07/2023 (gal)	SHIPPED TO DATE (gal)	NOTES	COMMENTS
OH	Vickery (Deep Well Injection)	3956 State Route 412, Vickery OH 43464	Y	approved	OHD020273819	6	30,076	1,062,146		
TX	Deer Park (Deep Well Injection)	2525 Independence Rd Deer Park, TX 77536	Y	approved	TXD000719518	67	329,524	9,847,905		EPA allowed on 02/28
MI	Romulus	28470 Citrin Drive Romulus, MI 48174	N	approved	MIR000016055	-	-	308,927		Not CERCLA approved
Totals						73	359,600	11,218,978		

Waste Stream, Disposal Facility, Date	# of Loads	Estimated Volume (Gal)	Manifested Facility Volume (Tons)
<i>Water impacted with vinyl chloride - U043, Listed Hazardous Waste</i>	2265	11,218,978	
Romulus U.S. Ecology	62	308,927	
2/20/2023	13	64,174	
2/21/2023	13	65,086	
2/22/2023	13	65,059	
2/23/2023	20	99,645	
2/24/2023	3	14,963	
Texas Molecular	1991	9,847,905	
2/14/2023	6	32,489	
2/15/2023	24	112,442	
2/16/2023	17	78,246	
2/17/2023	27	122,160	
2/18/2023	39	177,298	
2/19/2023	18	88,939	
2/20/2023	18	92,333	
2/21/2023	13	67,391	
2/22/2023	23	117,078	
2/23/2023	51	256,326	
2/24/2023	24	122,766	
2/25/2023	4	20,621	
2/28/2023	27	135,095	
3/1/2023	50	246,128	
3/2/2023	67	339,014	
3/3/2023	48	246,092	
3/4/2023	53	266,346	
3/5/2023	43	204,471	
3/6/2023	69	338,061	
3/7/2023	74	358,960	
3/8/2023	81	396,359	
3/9/2023	93	465,633	
3/10/2023	89	445,950	
3/11/2023	77	388,862	
3/12/2023	52	259,218	
3/13/2023	38	191,606	
3/14/2023	37	184,988	
3/15/2023	28	138,254	
3/16/2023	40	194,890	
3/17/2023	38	180,709	
3/18/2023	39	186,577	
3/19/2023	28	134,247	
3/20/2023	18	81,252	
3/21/2023	24	120,765	
3/22/2023	29	146,036	
3/23/2023	50	249,466	
3/24/2023	58	289,905	
3/25/2023	38	190,030	
3/26/2023	48	239,577	
3/27/2023	47	232,337	
3/28/2023	13	64,778	
3/29/2023	22	110,322	
3/30/2023	46	231,525	
3/31/2023	31	155,585	
4/1/2023	15	75,447	
4/2/2023	8	40,068	
4/3/2023	18	90,281	
4/4/2023	19	95,042	
4/5/2023	36	180,707	
4/6/2023	69	335,709	
4/7/2023	67	329,524	
Vickery Environmental	212	1,062,146	
2/15/2023	4	19,147	
2/16/2023	2	10,000	
2/19/2023	2	10,000	
2/20/2023	2	10,000	
2/21/2023	2	10,000	
2/22/2023	5	25,225	

Waste Stream, Disposal Facility, Date	# of Loads	Estimated Volume (Gal)	Manifested Facility Volume (Tons)
2/23/2023	4	20,065	
2/26/2023	4	20,400	
2/27/2023	4	20,425	
2/28/2023	4	20,401	
3/1/2023	7	35,588	
3/2/2023	4	20,140	
3/5/2023	5	25,300	
3/6/2023	5	25,093	
3/7/2023	5	25,293	
3/8/2023	8	40,062	
3/9/2023	7	35,115	
3/11/2023	1	5,000	
3/12/2023	2	10,040	
3/13/2023	5	25,054	
3/14/2023	5	25,004	
3/15/2023	8	40,097	
3/16/2023	4	20,017	
3/17/2023	2	10,200	
3/19/2023	5	25,004	
3/20/2023	6	30,062	
3/21/2023	7	35,329	
3/22/2023	7	35,311	
3/23/2023	9	44,958	
3/24/2023	3	14,902	
3/26/2023	1	5,050	
3/27/2023	7	34,593	
3/28/2023	6	29,820	
3/29/2023	9	44,872	
3/30/2023	7	34,966	
3/31/2023	7	34,530	
4/3/2023	8	40,038	
4/4/2023	8	40,011	
4/5/2023	8	39,999	
4/6/2023	7	34,959	
4/7/2023	6	30,076	
Soil Impacted with Vinyl Chloride (>10X UTS)	164		3,735
Ross Incineration Services	75		1,749
2/28/2023	2		48
3/1/2023	4		94
3/2/2023	2		48
3/3/2023	4		96
3/6/2023	4		92
3/7/2023	1		25
3/8/2023	1		23
3/9/2023	4		98
3/10/2023	4		102
3/13/2023	2		52
3/14/2023	2		52
3/15/2023	2		47
3/16/2023	5		124
3/17/2023	2		50
3/20/2023	3		73
3/21/2023	2		48
3/22/2023	2		49
3/23/2023	3		76
3/24/2023	4		100
3/27/2023	2		31
3/28/2023	2		49
3/29/2023	2		33
3/30/2023	2		46
3/31/2023	6		128
4/4/2023	1		18
4/5/2023	2		42
4/6/2023	2		39
4/7/2023	3		67
Heritage Thermal Services	89		1,986

Waste Stream, Disposal Facility, Date	# of Loads	Estimated Volume (Gal)	Manifested Facility Volume (Tons)
2/27/2023	4		89
2/28/2023	8		176
3/1/2023	8		174
3/2/2023	8		182
3/3/2023	6		137
3/4/2023	4		93
3/6/2023	8		184
3/7/2023	8		187
3/16/2023	1		18
3/17/2023	4		86
3/18/2023	4		93
3/20/2023	7		147
3/21/2023	4		85
4/5/2023	4		93
4/6/2023	9		202
4/7/2023	2		41
Soil Impacted with Vinyl Chloride (<10X UTS)	676		15,957
US Ecology	20		440
2/23/2023	6		132
2/24/2023	14		308
Heritage Environmental Services	605		14,387
2/28/2023	3		66
3/1/2023	18		419
3/3/2023	13		309
3/13/2023	4		94
3/14/2023	22		518
3/15/2023	34		819
3/16/2023	27		650
3/17/2023	21		503
3/19/2023	25		615
3/20/2023	31		763
3/21/2023	20		476
3/23/2023	27		652
3/24/2023	5		116
3/25/2023	1		26
3/26/2023	30		729
3/27/2023	18		441
3/28/2023	36		863
3/29/2023	37		910
3/30/2023	15		313
3/31/2023	24		589
4/2/2023	24		577
4/3/2023	38		907
4/4/2023	40		928
4/5/2023	34		791
4/6/2023	39		869
4/7/2023	19		444
Clean Harbors Deer Trail LLC	40		887
3/24/2023	8		189
3/25/2023	3		70
3/26/2023	5		118
3/28/2023	3		59
3/31/2023	5		108
4/1/2023	1		23
4/2/2023	2		43
4/4/2023	1		24
4/5/2023	4		85
4/6/2023	6		124
4/7/2023	2		44
Waste Control Specialist	11		243
4/5/2023	1		22
4/6/2023	2		42
4/7/2023	8		179
Grand Total	3105	11,218,978	19,692

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011399	2/14/2023	Quality Carriers	559F	Frac tank	C1531	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,336	4,647	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011401	2/14/2023	Quality Carriers	525F	Frac tank	703119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,429	5,511	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
3	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011402	2/14/2023	Quality Carriers	559F	Frac tank	701812	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,510	4,714	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
4	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011403	2/14/2023	Quality Carriers	559F/54 0A	Frac tank	701584	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,402	4,223	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
5	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011404	2/14/2023	Quality Carriers	540A	Frac tank	76128	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,402	5,081	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
6	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011405	2/14/2023	Quality Carriers	540A/51 5B	Frac tank	T5124	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,410	5,775	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
7	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011420	2/15/2023	Kuhnle Brothers	552A	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	4,967	4,906	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
8	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011425	2/15/2023	Quality Carriers	515B	Frac tank	27526	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,400	4,218	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
9	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011426	2/15/2023	Quality Carriers	552A/51 6F	Frac tank	7796	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,759	3,302	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
10	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011432	2/15/2023	Quality Carriers	516F/53 9C	Frac tank	703/405	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,622	4,618	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
11	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011433	2/15/2023	Quality Carriers	516F	Frac tank	TB53	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,773	4,669	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
12	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011434	2/15/2023	Quality Carriers	516F	Frac tank	TB21	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,828	3,576	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
13	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011406	2/15/2023	Quality Carriers	515B	Frac tank	67806	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,402	4,936	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
14	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011411	2/15/2023	Quality Carriers	564B	Frac tank	703021	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	2,325	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
15	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011412	2/15/2023	Quality Carriers	564B	Frac tank	702815	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,825	3,903	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
16	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011419	2/15/2023	Kuhnle Brothers	515A/55 2A	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	4,580	4,594	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
17	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011421	2/15/2023	Kuhnle Brothers	538F	Frac tank	1212	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	4,900	5,124	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
18	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011422	2/15/2023	Kuhnle Brothers	538F	Frac tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	4,700	4,202	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
19	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011427	2/15/2023	Quality Carriers	539C/51 6F	Frac tank	703159	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,000	4,611	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
20	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011428	2/15/2023	Quality Carriers	598B	Frac tank	70746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,000	4,121	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
21	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011429	2/15/2023	Quality Carriers	539C	Frac tank	11341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,471	4,844	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
22	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011430	2/15/2023	Quality Carriers	539C	Frac tank	CH8128	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,497	4,599	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
23	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011431	2/15/2023	Quality Carriers	539C	Frac tank	702/885	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,497	3,618	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
24	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011435	2/15/2023	Robbie D Wood	516F/59 8B	Frac tank	7738	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,000	4,057	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
25	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011440	2/15/2023	Quality Carriers	598B	Frac tank	702534	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,000	4,095	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
26	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011455	2/15/2023	Quality Carriers	512A/52 6F	Frac tank	701967	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,144	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
27	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011456	2/15/2023	Quality Carriers	526F	Frac tank	CH7067	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,088	5,098	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
28	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011457	2/15/2023	Quality Carriers	526F	Frac tank	702137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	5,012	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
29	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011458	2/15/2023	Quality Carriers	538F	Frac tank	702088	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,856	5,153	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
30	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011459	2/15/2023	Quality Carriers	570E	Frac tank	RV717	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,884	5,287	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
31	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011460	2/15/2023	Quality Carriers	564B	Frac tank	701311	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,623	3,621	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
32	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011461	2/15/2023	Quality Carriers	526F	Frac tank	5167	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,179	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
33	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011485	2/15/2023	Quality Carriers	516F	Frac tank	702960	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,000	4,100	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
34	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011491	2/15/2023	Quality Carriers	538F	Frac tank	5L745	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,895	4,606	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
35	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011408	2/16/2023	Quality Carriers	505B	Frac tank	LT125	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,372	4,560	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
36	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011413	2/16/2023	Quality Carriers	564B	Frac tank	703997	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,889	4,853	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
37	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011416	2/16/2023	Quality Carriers	570E	Frac tank	702105	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,629	3,690	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
38	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011417	2/16/2023	Quality Carriers	570E	Frac tank	CH7922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,548	2,562	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
39	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011418	2/16/2023	Quality Carriers	570E	Frac tank	7230	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,437	2,730	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
40	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011423	2/16/2023	Kuhnle Brothers	514E	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	2,404	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
41	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	020011424	2/16/2023	Kuhnle Brothers	513C	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,263	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
42	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011446	2/16/2023	Quality Carriers	552A	Frac tank	703029	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,800	3,958	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
43	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011462	2/16/2023	Heniff Transportation	514E	Frac tank	3134	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,555	4,314	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
44	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011463	2/16/2023	Heniff Transportation	514E	Frac tank	43208	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,496	4,784	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
45	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011464	2/16/2023	Heniff Transportation	552A/505B	Frac tank	11938	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,800	4,351	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
46	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011465	2/16/2023	Heniff Transportation	505B	Frac tank	61659	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,166	4,942	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
47	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011466	2/16/2023	Heniff Transportation	505B	Frac tank	5328	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,636	4,700	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
48	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011467	2/16/2023	Heniff Transportation	505B/515B	Frac tank	21--1875	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,200	2,965	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
49	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011475	2/16/2023	Heniff Transportation	513C	Frac tank	11-1198	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,566	4,625	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
50	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011476	2/16/2023	Heniff Transportation	513C	Frac tank	11655	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,555	4,393	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
51	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011486	2/16/2023	Quality Carriers	598B	Frac tank	70704	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,800	4,635	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
52	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240510	2/16/2023	Action Resources	564B/251788	Frac tank	749034	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,900	4,985	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
53	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240605	2/16/2023	Robbie D Wood	564B	Frac tank	LT2225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,897	4,904	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
54	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126930	2/17/2023	Quality Carriers	251788	Frac tank	8895	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,896	4,997	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
55	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126932	2/17/2023	Quality Carriers	555D	Frac tank	70541	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,555	3,836	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
56	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126933	2/17/2023	Quality Carriers	540A	Frac tank	74475	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,800	5,139	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
57	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126935	2/17/2023	Quality Carriers	538B	Frac tank	SL701	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,568	4,568	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
58	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126949	2/17/2023	Quality Carriers	513C/514E	Frac tank	703312	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,406	3,261	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
59	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011407	2/17/2023	Quality Carriers	538B	Frac tank	CH8203	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	4,538	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
60	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011436	2/17/2023	Robbie D Wood	542C/538B	Frac tank	LT2218	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	4,647	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
61	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011439	2/17/2023	Robbie D Wood	542C	Frac tank	SIRV115	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	4,772	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
62	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011468	2/17/2023	Heniff Transportation	573D	Frac tank	5251	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,369	4,654	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
63	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011469	2/17/2023	Heniff Transportation	542C	Frac tank	11-1401	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	5,271	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
64	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011470	2/17/2023	Heniff Transportation	538B	Frac tank	41-3446	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,432	4,764	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
65	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011471	2/17/2023	Heniff Transportation	251694	Frac tank	11-1090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,458	4,635	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
66	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011472	2/17/2023	Heniff Transportation	251694	Frac tank	LT-2065	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,205	4,431	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
67	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011473	2/17/2023	Heniff Transportation	514E/251694	Frac tank	8000	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,487	4,479	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
68	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240507	2/17/2023	Action Resources	573D	Frac tank	SIR003	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	4,971	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
69	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240508	2/17/2023	Action Resources	555D	Frac tank	TRI-117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	3,584	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
70	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240509	2/17/2023	Action Resources	515B/536E	Frac tank	SIR0050	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	4,560	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
71	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240549	2/17/2023	Heniff Transportation	515B	Frac tank	21-1718	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,677	3,772	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
72	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240550	2/17/2023	Heniff Transportation	515B	Frac tank	43265	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,772	3,548	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
73	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240551	2/17/2023	Heniff Transportation	536E	Frac tank	1837	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,600	4,593	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
74	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240571	2/17/2023	Heniff Transportation	536E	Frac tank	1963	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,900	4,419	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
75	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240572	2/17/2023	Heniff Transportation	540A/530F	Frac tank	70252R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,884	4,861	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
76	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240581	2/17/2023	Heniff Transportation	542C	Frac tank	21-713	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,497	4,373	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
77	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240582	2/17/2023	Heniff Transportation	536E	Frac tank	1567	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,200	4,178	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
78	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240594	2/17/2023	Heniff Transportation	573D/542C	Frac tank	7090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,200	4,110	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
79	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240595	2/17/2023	Heniff Transportation	555D/573D	Frac tank	589	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,416	2,713	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
80	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240596	2/17/2023	Heniff Transportation	555D	Frac tank	5337	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,343	5,237	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
81	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126917	2/18/2023	Quality Carriers	256100	Frac tank	SK808	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,473	3,971	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
82	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126918	2/18/2023	Quality Carriers	AL4216	Frac tank	703294	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	3,866	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
83	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126919	2/18/2023	Quality Carriers	592B	Frac tank	68104	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,385	5,275	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
84	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126923	2/18/2023	Quality Carriers	525F	Frac tank	703454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,758	4,774	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
85	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126924	2/18/2023	Quality Carriers	508C/256160	Frac tank	5157	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,501	4,606	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
86	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126934	2/18/2023	Quality Carriers	530F	Frac tank	702711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,892	4,902	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
87	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011410	2/18/2023	Quality Carriers	251694/256100	Frac tank	CH7834	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	3,901	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
88	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011474	2/18/2023	Heniff Transportation	AL4216	Frac tank	4ER-03	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,609	2,672	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
89	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240502	2/18/2023	Action Resources	592B	Frac tank	611	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	5,348	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
90	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240511	2/18/2023	Heniff Transportation	525F	Frac tank	Pending	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,736	3,537	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
91	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240512	2/18/2023	Heniff Transportation	508C	Frac tank	43829	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,594	4,604	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
92	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240513	2/18/2023	Heniff Transportation	256160/547E	Frac tank	11-453	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,692	4,404	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
93	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240514	2/18/2023	Heniff Transportation	547E	Frac tank	43808	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,613	4,741	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
94	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240515	2/18/2023	Heniff Transportation	547E	Frac tank	11-1253	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	4,563	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
95	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240516	2/18/2023	Heniff Transportation	547E	Frac tank	3356	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,861	4,904	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
96	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240517	2/18/2023	Heniff Transportation	560F	Frac tank	4891	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,839	4,973	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
97	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240521	2/18/2023	Heniff Transportation	256160	Frac tank	11-1005	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,600	4,719	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
98	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240522	2/18/2023	Heniff Transportation	508C	Frac tank	LT-1590	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,724	3,718	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
99	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240523	2/18/2023	Heniff Transportation	559F/525F	Frac tank	111084	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,323	4,377	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
100	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240545	2/18/2023	Heniff Transportation	538B/586A	Frac tank	CC70146	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,475	3,549	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
101	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240552	2/18/2023	Heniff Transportation	586A	Frac tank	70274R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,488	5,069	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
102	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240553	2/18/2023	Heniff Transportation	256100	Frac tank	41-3065	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,562	3,511	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
103	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240555	2/18/2023	Heniff Transportation	586A/592B	Frac tank	11-490	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,930	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
104	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240556	2/18/2023	Heniff Transportation	592B	Frac tank	1895	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,507	4,377	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
105	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240557	2/18/2023	Heniff Transportation	592B/566E	Frac tank	21-0202	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,479	4,239	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
106	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240558	2/18/2023	Heniff Transportation	AL4216	Frac tank	4712	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,385	4,563	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
107	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240559	2/18/2023	Heniff Transportation	560B	Frac tank	49-0265	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,600	3,288	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
108	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240563	2/18/2023	Schneider National	559F	Frac tank	28405	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,811	4,841	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
109	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240564	2/18/2023	Schneider National	586A	Frac tank	28782	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,884	5,519	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
110	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240568	2/18/2023	Schneider National	256100	Frac tank	28378	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	4,628	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
111	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240569	2/18/2023	Schneider National	508C	Frac tank	25693	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,199	4,010	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
112	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240573	2/18/2023	Heniff Transportation	530F	Frac tank	21-2014	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,805	4,635	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
113	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240574	2/18/2023	Heniff Transportation	530F	Frac tank	11-762	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,889	4,858	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
114	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240583	2/18/2023	Heniff Transportation	AL4216	Frac tank	01114	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,692	3,804	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
115	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240588	2/18/2023	Heniff Transportation	560B	Frac tank	49-0477	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,472	3,315	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
116	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240589	2/18/2023	Heniff Transportation	560B	Frac tank	11-1055	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	4,508	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
117	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240590	2/18/2023	Heniff Transportation	566E	Frac tank	43838	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,594	4,630	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
118	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240592	2/18/2023	Heniff Transportation	566E	Frac tank	1585	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,691	3,636	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
119	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240593	2/18/2023	Heniff Transportation	566E	Frac tank	6197	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,101	4,932	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
120	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126920	2/19/2023	Quality Carriers	560F	Frac tank	LL703	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,962	3,736	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
121	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011487	2/19/2023	Quality Carriers	572A	Frac tank	11341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,225	5,207	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
122	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240503	2/19/2023	Action Resources	560F	Frac tank	SIR0080	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,626	4,719	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
123	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240518	2/19/2023	Heniff Transportation	560B	Frac tank	41-910	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,889	4,860	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
124	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240519	2/19/2023	Heniff Transportation	AL5679	Frac tank	7-79	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,566	4,637	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
125	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240520	2/19/2023	Heniff Transportation	5608	Frac tank	43432	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,641	4,885	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
126	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240524	2/19/2023	Heniff Transportation	AL5679/ AL4944	Frac tank	21-3405	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,020	4,170	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
127	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240560	2/19/2023	Heniff Transportation	560F	Frac tank	11-1086	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,829	4,733	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
128	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240561	2/19/2023	Schneider National	507F	Frac tank	21431	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,963	4,177	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
129	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240575	2/19/2023	Heniff Transportation	AL5679	Frac tank	11-296	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	5,035	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
130	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240576	2/19/2023	Heniff Transportation	AL4944	Frac tank	1981	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	4,321	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
131	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240577	2/19/2023	Heniff Transportation	AL4944	Frac tank	11-654	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,888	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
132	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240578	2/19/2023	Heniff Transportation	537A	Frac tank	11-603	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,859	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
133	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240587	2/19/2023	Heniff Transportation	571B	Frac tank	7027	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,896	4,386	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
134	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240591	2/19/2023	Heniff Transportation	AL4944	Frac tank	43237	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,010	5,134	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
135	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240597	2/19/2023	Heniff Transportation	507F	Frac tank	8020	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,902	4,447	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
136	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240608	2/19/2023	Kuhnle Brothers	537A	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,967	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
137	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240617	2/19/2023	Kuhnle Brothers	572A	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,784	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
138	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240661	2/19/2023	Heniff Transportation	507F	Frac tank	CC7025	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,116	5,300	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
139	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240662	2/19/2023	Heniff Transportation	537A	Frac tank	2992	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	4,983	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
140	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126927	2/20/2023	Quality Carriers	AL4787	Frac tank	703119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,273	5,189	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
141	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126928	2/20/2023	Quality Carriers	AL4787	Frac tank	C1531	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,444	4,623	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
142	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011442	2/20/2023	Quality Carriers	593D	Frac tank	701812	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,657	4,332	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
143	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011443	2/20/2023	Quality Carriers	593D	Frac tank	67188	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,991	4,273	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
144	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011444	2/20/2023	Quality Carriers	593D	Frac tank	701584	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	5,036	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
145	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011445	2/20/2023	Quality Carriers	572A	Frac tank	703021	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,762	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
146	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240505	2/20/2023	Action Resources	AL5484	Frac tank	749062	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	5,038	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
147	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240570	2/20/2023	Schneider National	AL4787	Frac tank	25731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,888	4,249	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
148	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240600	2/20/2023	Heniff Transportation	593D/AL 4710	Frac tank	4987	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,968	5,069	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
149	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240615	2/20/2023	Kuhnle Brothers	AL5645	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,612	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
150	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240616	2/20/2023	Kuhnle Brothers	566B/AL 5645	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,009	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
151	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240646	2/20/2023	Quality Carriers	AL4710	Frac tank	5167	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	4,567	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
152	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240647	2/20/2023	Quality Carriers	AL4710	Frac tank	70682	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,573	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
153	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240648	2/20/2023	Quality Carriers	AL4710	Frac tank	703405	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,078	4,901	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
154	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240654	2/20/2023	Heniff Transportation	AL4787	Frac tank	5759	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,090	5,026	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
155	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240663	2/20/2023	Heniff Transportation	571B	Frac tank	CC70145	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,093	5,198	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
156	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240664	2/20/2023	Heniff Transportation	257271	Frac tank	11-1295	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,897	4,909	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
157	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240673	2/20/2023	Kuhnle Brothers	566B	Frac tank	746	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
158	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240674	2/20/2023	Kuhnle Brothers	251650	Frac tank	1007	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,094	5094	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
159	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240675	2/20/2023	Kuhnle Brothers	251650/ 511A	Frac tank	731	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,193	5193	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
160	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240676	2/20/2023	Kuhnle Brothers	251650	Frac tank		Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
161	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240677	2/20/2023	Kuhnle Brothers	AL5645/ 251656	Frac tank	1268	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,016	5016	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
162	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240678	2/20/2023	Kuhnle Brothers	AL5645	Frac tank	1221	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,800	4800	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
163	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240680	2/20/2023	Kuhnle Brothers	AL5645	Frac tank	1215	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
164	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240681	2/20/2023	Kuhnle Brothers	566B	Frac tank	1212	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,600	4600	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
165	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240682	2/20/2023	Kuhnle Brothers	566B	Frac tank	1209	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
166	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240689	2/20/2023	Kuhnle Brothers	553A	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,931	4931	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
167	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240690	2/20/2023	Kuhnle Brothers	1/553A/ P	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,548	4548	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
168	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240691	2/20/2023	Heniff Transportation	271/ Pend	Frac tank	Pending	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,950	4950	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
169	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240692	2/20/2023	Kuhnle Brothers	57271/ P	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,964	4964	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
170	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240701	2/20/2023	Schneider National	574B	Frac tank	25691	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,510	5,080	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
171	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240777	2/20/2023	Heniff Transportation	511A	Frac tank	NA-02	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,125	4,740	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
172	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240778	2/20/2023	Kuhnle Brothers	511A	Frac tank	520	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,028	5028	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
173	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240613	2/21/2023	Kuhnle Brothers	256169	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,767	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
174	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240614	2/21/2023	Kuhnle Brothers	558F	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,619	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
175	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240671	2/21/2023	Heniff Transportation	553A	Frac tank	CC7076	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,454	4,553	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
176	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240672	2/21/2023	Heniff Transportation	553A	Frac tank	21-3691	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,893	4,347	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
177	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240683	2/21/2023	Kuhnle Brothers	553A	Frac tank	1212	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,957	4957	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
178	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240684	2/21/2023	Kuhnle Brothers	514D	Frac tank	746	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,942	4942	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
179	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240738	2/21/2023	Heniff Transportation	574B/531A	Frac tank	41-3887 (112995)	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,145	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
180	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240739	2/21/2023	Heniff Transportation	531A	Frac tank	41-3731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,165	4,015	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
181	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240740	2/21/2023	Heniff Transportation	531A	Frac tank	11-462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,070	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
182	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240741	2/21/2023	Heniff Transportation	531A	Frac tank	DM20	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,099	4,018	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
183	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240759	2/21/2023	Heniff Transportation	574B	Frac tank	3RG23138	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,067	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
184	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240760	2/21/2023	Heniff Transportation	531A/AL4735	Frac tank	1779	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,093	4,020	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
185	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240761	2/21/2023	Heniff Transportation	256169	Frac tank	1093	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,855	4,943	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
186	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240762	2/21/2023	Heniff Transportation	AL4735	Frac tank	LT-1797	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	4,827	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
187	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240763	2/21/2023	Heniff Transportation	257516	Frac tank	1392	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,152	5,198	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
188	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240764	2/21/2023	Heniff Transportation	AL4735	Frac tank	3RG23147	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,374	4,634	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
189	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240796	2/21/2023	Kuhnle Brothers	586A	Frac tank	1429 - Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,062	5062	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
190	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240797	2/21/2023	Kuhnle Brothers	257516	Frac tank	731	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,134	5134	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
191	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240798	2/21/2023	Kuhnle Brothers	251543	Frac tank	1209	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
192	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240799	2/21/2023	Kuhnle Brothers	251543	Frac tank	771	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
193	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240800	2/21/2023	Kuhnle Brothers	251543	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,300	5300	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
194	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240801	2/21/2023	Kuhnle Brothers	256169	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,094	5094	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
195	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240802	2/21/2023	Kuhnle Brothers	558F	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,028	5,028	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
196	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240803	2/21/2023	Kuhnle Brothers	558F	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,069	5069	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
197	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240804	2/21/2023	Kuhnle Brothers	558F	Frac tank	1221	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
198	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240805	2/21/2023	Kuhnle Brothers	511A	Frac tank	1215	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,500	4500	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
199	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240807	2/21/2023	Kuhnle Brothers	511A	Frac tank	871	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
200	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240814	2/21/2023	Action Resources	257516	Frac tank	SIR0092	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,760	5,722	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
201	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011438	2/22/2023	Robbie D Wood	560B/AL4944	Frac Tank	LT-2206	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,095	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
202	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240873	2/22/2023	Kuhnle Brothers	AL4216	Frac tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,065	4,275	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
203	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240506	2/22/2023	Action Resources	251871	Frac tank	749010	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,522	4,976	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
204	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240526	2/22/2023	Heniff Transportation	251002	Frac tank	21-1875	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,030	5,057	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
205	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240598	2/22/2023	Heniff Transportation	257390	Frac tank	1837	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,020	4,934	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
206	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240609	2/22/2023	Kuhnle Brothers	553B	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,058	4,503	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
207	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240612	2/22/2023	Kuhnle Brothers	514D/553B	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	4,967	4,449	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
208	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240645	2/22/2023	Quality Carriers	586A	Frac tank	TB53	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,160	4,434	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
209	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240685	2/22/2023	Kuhnle Brothers	514D	Frac tank	1364 - Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4886	4886	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
210	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240687	2/22/2023	Kuhnle Brothers	553B	Frac tank	851	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,402	5402	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
211	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240688	2/22/2023	Kuhnle Brothers	514D	Frac tank	1212	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,957	4957	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
212	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240693	2/22/2023	Schneider National	507F	Frac tank	21479	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,124	4,331	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
213	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240694	2/22/2023	Schneider National	251871	Frac tank	29012	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,524	5,152	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
214	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240735	2/22/2023	Quality Carriers	251688/251782	Frac tank	703262	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	5,247	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
215	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240736	2/22/2023	Quality Carriers	257761	Frac tank	703159	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,079	4,287	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
216	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240737	2/22/2023	Quality Carriers	257761	Frac tank	702815	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,523	4,947	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
217	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240766	2/22/2023	Heniff Transportation	257761	Frac tank	11143	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,976	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
218	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240767	2/22/2023	Heniff Transportation	251688	Frac tank	11295	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,500	4,781	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
219	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240768	2/22/2023	Heniff Transportation	266384	Frac tank	1327	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,995	4,491	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
220	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240775	2/22/2023	Heniff Transportation	AL4944	Frac tank	70225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,071	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
221	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240776	2/22/2023	Heniff Transportation	560B	Frac Tank	43208	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,179	4,928	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
222	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240779	2/22/2023	Kuhnle Brothers	252651	Frac tank	420 - Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
223	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240780	2/22/2023	Kuhnle Brothers	251871	Frac tank	771	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
224	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240784	2/22/2023	Kuhnle Brothers	257390/586A	Frac tank	1029	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,062	5062	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
225	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240793	2/22/2023	Kuhnle Brothers	251782	Frac tank	871	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
226	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240794	2/22/2023	Kuhnle Brothers	257761	Frac tank	1195	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
227	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240795	2/22/2023	Kuhnle Brothers	266384	Frac tank	Pending	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
228	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240812	2/22/2023	Robbie D Wood	257390	Frac tank	LT2211	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,027	5,052	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
229	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240813	2/22/2023	Robbie D Wood	252651	Frac tank	7656	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,522	4,817	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
230	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240817	2/22/2023	Action Resources	586A/251002	Frac tank	SIR0087	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,911	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
231	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240819	2/22/2023	Action Resources	252651	Frac tank	SIR0056	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,538	4,834	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
232	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240820	2/22/2023	Kuhnle Brothers	553B	Frac tank	746	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,179	5179	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
233	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240858	2/22/2023	Kuhnle Brothers	AL4216	Frac tank	1215	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,957	4957	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
234	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240859	2/22/2023	Kuhnle Brothers	AL4216	Frac tank	926	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,477	4477	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
235	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240860	2/22/2023	Kuhnle Brothers	251782	Frac tank	1209	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,461	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
236	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240862	2/22/2023	Kuhnle Brothers	553B/502D	Frac Tank	863	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,135	4,993	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
237	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240765	2/22/2023	Heniff Transportation	586A	Frac tank	CC7060	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,102	4,923	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
238	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	012702384	2/23/2023	SJ Transportation	251002/251478	Frac tank	TV-215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,033	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
239	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126925	2/23/2023	Quality Carriers	251478	Frac tank	215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,273	5,135	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
240	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126926	2/23/2023	Quality Carriers	532A	Frac tank	702418	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	4,153	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
241	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011488	2/23/2023	Quality Carriers	532A	Frac tank	703029	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,034	4,185	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
242	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240504	2/23/2023	Action Resources	578D	Frac tank	CU12105	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,008	4,954	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
243	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240525	2/23/2023	Heniff Transportation	513A	Frac tank	8000	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,487	4,382	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
244	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240601	2/23/2023	Robbie D Wood	251060/574D	Frac tank	7979	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,274	5,309	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
245	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240610	2/23/2023	Kuhnle Brothers	256169	Frac tank	1209	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,449	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
246	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240611	2/23/2023	Kuhnle Brothers	256169	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,876	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
247	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240619	2/23/2023	Quality Carriers	257225	Frac tank	702711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
248	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240635	2/23/2023	Quality Carriers	251091	Frac tank	CH7922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,095	5,020	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
249	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240642	2/23/2023	Quality Carriers	501F	Frac tank	702997	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,122	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
250	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240643	2/23/2023	Quality Carriers	251026	Frac tank	5157	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,060	4973	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
251	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240644	2/23/2023	Quality Carriers	251079/501F	Frac tank	70541	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,986	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
252	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240655	2/23/2023	Heniff Transportation	AL4754	Frac tank	5238	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	5,237	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
253	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240660	2/23/2023	Heniff Transportation	574D	Frac tank	49-0477	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,220	5119	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
254	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240665	2/23/2023	Heniff Transportation	257516	Frac tank	43236	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,010	4,537	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
255	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240666	2/23/2023	Heniff Transportation	502D	Frac tank	LT-2119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,712	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
256	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240667	2/23/2023	Heniff Transportation	593D	Frac tank	11-1389	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,398	4,401	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
257	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240668	2/23/2023	Heniff Transportation	251650	Frac tank	1813	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	5,133	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
258	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240669	2/23/2023	Heniff Transportation	AL5645	Frac tank	3134	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,984	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
259	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240670	2/23/2023	Heniff Transportation	511A/251650	Frac tank	6197	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,047	5,172	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
260	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240702	2/23/2023	Schneider National	521B	Frac tank	25618	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,001	4,271	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
261	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240703	2/23/2023	Schneider National	511A	Frac tank	21444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,003	4,348	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
262	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240707	2/23/2023	Schneider National	532A	Frac tank	21915	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,002	4,022	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
263	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240708	2/23/2023	Quality Carriers	251633	Frac tank	70704	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,064	4,295	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
264	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240709	2/23/2023	Quality Carriers	251079/251091	Frac tank	66104	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,112	4,873	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
265	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240710	2/23/2023	Quality Carriers	257516/511A	Frac tank	701867	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,971	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
266	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240734	2/23/2023	Quality Carriers	AL4787/AL5645	Frac tank	CH8203	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,272	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
267	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240742	2/23/2023	Heniff Transportation	251683/251633	Frac tank	1590	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,004	4,697	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
268	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240743	2/23/2023	Heniff Transportation	257204	Frac tank	43847	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	4,863	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
269	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240744	2/23/2023	Heniff Transportation	558F	Frac tank	01137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,058	3,940	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
270	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240745	2/23/2023	Heniff Transportation	558F	Frac tank	11-1198	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,064	4,908	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
271	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240746	2/23/2023	Heniff Transportation	558F	Frac tank	21-3927	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,300	4,894	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
272	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240747	2/23/2023	Heniff Transportation	252007/266265	Frac tank	41-3269	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,125	3,969	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
273	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240748	2/23/2023	Heniff Transportation	251688	Frac tank	41-3263	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,150	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
274	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240749	2/23/2023	Heniff Transportation	251688	Frac tank	21-1839	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	3,775	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
275	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240750	2/23/2023	Heniff Transportation	251026	Frac tank	2992	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,160	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
276	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240751	2/23/2023	Heniff Transportation	AL4755	Frac tank	1906	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,020	5,842	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
277	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240752	2/23/2023	Heniff Transportation	AL4754/AL4755	Frac tank	11727 (V13671)	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,499	5,028	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
278	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240753	2/23/2023	Heniff Transportation	AL4754	Frac tank	70251R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	4,988	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
279	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240754	2/23/2023	Heniff Transportation	251079	Frac tank	CC-70146	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,071	4,142	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
280	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240755	2/23/2023	Heniff Transportation	251091	Frac tank	11-270	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,120	4,988	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
281	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240756	2/23/2023	Heniff Transportation	AL4754	Frac tank	21-3937	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,054	4,103	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
282	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240757	2/23/2023	Heniff Transportation	521B	Frac tank	21-3867	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	4,263	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
283	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240758	2/23/2023	Heniff Transportation	532A	Frac tank	21-2138	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,032	3,446	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
284	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240769	2/23/2023	Heniff Transportation	251478/251321	Frac tank	41-3468	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	5,135	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
285	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240770	2/23/2023	Heniff Transportation	251321	Frac tank	43838	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,060	5,191	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
286	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240771	2/23/2023	Heniff Transportation	251683	Frac tank	11-1401	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,059	4,996	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
287	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240781	2/23/2023	Kuhnle Brothers	257225	Frac tank	1195	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
288	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240782	2/23/2023	Kuhnle Brothers	257204	Frac tank	871	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
289	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240783	2/23/2023	Kuhnle Brothers	252007	Frac tank	1215	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
290	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240785	2/23/2023	Kuhnle Brothers	AL4754	Frac tank	520	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,038	5038	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
291	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240786	2/23/2023	Kuhnle Brothers	AL4755/251026	Frac tank	851	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,400	5400	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
292	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240787	2/23/2023	Kuhnle Brothers	501F/252007	Frac tank	1007	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,094	5094	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
293	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240788	2/23/2023	Kuhnle Brothers	501F	Frac tank	1212	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
294	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240789	2/23/2023	Kuhnle Brothers	251688	Frac tank	746	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
295	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240790	2/23/2023	Kuhnle Brothers	251091	Frac tank	926	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,400	4400	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
296	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240815	2/23/2023	Action Resources	593D	Frac tank	R754	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,281	5,358	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
297	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240846	2/23/2023	Kuhnle Brothers	251650	Frac tank	843	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,014	5014	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
298	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240847	2/23/2023	Kuhnle Brothers	251650/AL5645	Frac tank	1029	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,062	5062	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
299	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240848	2/23/2023	Kuhnle Brothers	578D/514D	Frac tank	771	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,845	4845	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
300	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240851	2/23/2023	Kuhnle Brothers	578D	Frac tank	1268	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,636	4636	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
301	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240864	2/23/2023	Kuhnle Brothers	593D	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,969	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
302	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240881	2/23/2023	SJ Transportation	532A/521B	Frac tank	TV-232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,522	4,500	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
303	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240886	2/23/2023	SJ Transportation	251321/251683	Frac tank	TV-246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,029	4,702	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
304	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240891	2/23/2023	SJ Transportation	502D/578D	Frac tank	TV-226	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,856	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
305	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240920	2/23/2023	Kuhnle Brothers	251060	Frac tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,065	4,901	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
306	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240921	2/23/2023	Kuhnle Brothers	257516	Frac tank	731	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,139	5139	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
307	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240922	2/23/2023	Kuhnle Brothers	257204	Frac tank	912	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,003	5003	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
308	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240923	2/23/2023	Kuhnle Brothers	257204	Frac tank	542	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
309	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240924	2/23/2023	Kuhnle Brothers	558F	Frac tank	1221	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
310	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240950	2/23/2023	Kuhnle Brothers	251543	Frac tank	1213	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
311	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240951	2/23/2023	Kuhnle Brothers	257225	Frac tank	863	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,014	5014	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
312	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240656	2/24/2023	Heniff Transportation	586A	Frac tank	4712	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,968	4,875	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
313	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240657	2/24/2023	Heniff Transportation	251788	Frac tank	11-490	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,225	3,995	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
314	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240658	2/24/2023	Heniff Transportation	586A	Frac tank	43796	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,187	4,724	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
315	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240659	2/24/2023	Heniff Transportation	AL4787	Frac tank	11-1090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,112	4,979	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
316	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240731	2/24/2023	Quality Carriers	586A/257390	Frac tank	701584	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,977	3,925	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
317	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240732	2/24/2023	Quality Carriers	586A	Frac tank	LL703	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,041	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
318	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240733	2/24/2023	Quality Carriers	AL4787/251362	Frac tank	702534	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,276	4,486	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
319	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240772	2/24/2023	Heniff Transportation	251788	Frac tank	1981	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,250	4,505	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
320	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240853	2/24/2023	Kuhnle Brothers	257393	Frac Tank	520	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	5000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
321	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240854	2/24/2023	Kuhnle Brothers	AL-470	Frac Tank	1007	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,009	5009	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
322	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240918	2/24/2023	Kuhnle Brothers	251362	Frac tank	870	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	4,954	4954	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
323	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240965	2/24/2023	Schneider National	257925	Frac Tank	21944	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,002	4,088	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
324	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240970	2/24/2023	Action Resources	257390	Frac tank	749036	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,846	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
325	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240988	2/24/2023	Quality Carriers	257925/AL4710	Frac Tank	7067	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,201	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
326	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240989	2/24/2023	Quality Carriers	AL4710	Frac Tank	703036	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,299	5,511	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
327	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240990	2/24/2023	Quality Carriers	251632	Frac tank	67188	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,233	4,348	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
328	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240991	2/24/2023	Quality Carriers	251632	Frac tank	SL 701	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,156	5,236	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
329	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240992	2/24/2023	Quality Carriers	257393	Frac tank	702105	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,275	4,541	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
330	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252001	2/24/2023	Heniff Transportation	251632	Frac tank	21-1755	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,280	4,536	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
331	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252002	2/24/2023	Heniff Transportation	257390/257925	Frac Tank	43829	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,006	4,765	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
332	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252003	2/24/2023	Heniff Transportation	AL4710	Frac Tank	41-3463	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,249	4,479	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
333	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252004	2/24/2023	Heniff Transportation	AL4710	Frac Tank	49-0227	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	4,300	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
334	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252037	2/24/2023	Heniff Transportation	AL4710	Frac Tank	LT-1591	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,002	5,362	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
335	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252038	2/24/2023	Heniff Transportation	AL4710	Frac Tank	43265	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,159	4,240	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
336	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252040	2/24/2023	Heniff Transportation		Frac Tank	589	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,127	4,945	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
337	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252057	2/24/2023	Heniff Transportation	AL4710	Frac Tank	41-3952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,150	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
338	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252059	2/24/2023	Heniff Transportation	251632	Frac Tank	21-1920	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,551	4,514	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
339	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240987	2/25/2023	Quality Carriers	252656	Frac tank	703454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	5,253	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
340	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252060	2/25/2023	Heniff Transportation	251362	Frac tank	11-654	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,192	5,014	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
341	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252061	2/25/2023	Heniff Transportation	251362	Frac tank	1730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,188	4,705	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
342	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252062	2/25/2023	Heniff Transportation	252656/559B	Frac tank	11-358	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,570	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
343	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240865	2/26/2023	Kuhnle Brothers	251362	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	3,258	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
344	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240866	2/26/2023	Kuhnle Brothers	251362	Frac tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,200	5,231	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
345	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240867	2/26/2023	Kuhnle Brothers	251362	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	3,937	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
346	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240868	2/26/2023	Kuhnle Brothers	251362/AL4787	Frac tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,200	4,939	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
347	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240869	2/27/2023	Kuhnle Brothers	AL4787	Frac tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,865	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
348	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240870	2/27/2023	Kuhnle Brothers	AL4787	Frac tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,225	5,225	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
349	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240871	2/27/2023	Kuhnle Brothers	AL4710	Frac tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,200	5,066	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
350	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240872	2/27/2023	Kuhnle Brothers	AL4710	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,005	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
351	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252085	2/28/2023	Kuhnle Brothers	1268	Frac tank	548A	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,201	5,201	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
352	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252086	2/28/2023	Kuhnle Brothers	548A	Frac tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,103	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
353	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252087	2/28/2023	Kuhnle Brothers	548A	Frac tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
354	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252088	2/28/2023	Kuhnle Brothers	548A	Frac tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	5,200	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
355	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240711	2/28/2023	Quality Carriers	AL4787	Frac tank	702361	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	5,173	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
356	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240887	2/28/2023	SJ Transportation	AL4787	Frac tank	TV-214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
357	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252081	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	5,200	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
358	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252082	2/28/2023	Kuhnle Brothers	548A	Frac tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
359	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252083	2/28/2023	Kuhnle Brothers	AL4710	Frac tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,957	4,957	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
360	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252084	2/28/2023	Kuhnle Brothers	AL4710	Frac tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
361	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252090	2/28/2023	Kuhnle Brothers	AL5484	Frac tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,056	5,056	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
362	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252091	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,056	5,056	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
363	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252092	2/28/2023	Kuhnle Brothers	AL5484	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,999	4,999	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
364	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252093	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,053	5,053	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
365	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252094	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,178	5,178	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
366	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252095	2/28/2023	Kuhnle Brothers	AL4787/ AL4710	Frac tank	647	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	5,094	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
367	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252096	2/28/2023	Kuhnle Brothers	AL5484	Frac tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
368	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252100	2/28/2023	Heniff Transportation	AL5484	Frac tank	1779	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,039	4,913	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
369	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252101	2/28/2023	Heniff Transportation	AL5484/ AL4787	Frac Tank	802D	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,032	4,827	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
370	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252102	2/28/2023	Heniff Transportation	AL4787/ AL5484	Frac tank	DM20	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,099	5,099	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
371	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252104	2/28/2023	Heniff Transportation	526F	Frac Tank	1137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,000	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
372	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252119	2/28/2023	Heniff Transportation	548A	Frac Tank	7027	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	4,690	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
373	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252131	2/28/2023	Enviroserve	AL4710	Frac Tank	S3364	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,944	3,944	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
374	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252132	2/28/2023	Enviroserve	AL4787	Frac Tank	25-418	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,052	4,052	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
375	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252134	2/28/2023	Kuhnle Brothers	548A	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,824	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
376	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252135	2/28/2023	Kuhnle Brothers	548A	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,977	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
377	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252136	2/28/2023	Kuhnle Brothers	548A	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,201	5,093	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
378	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252137	2/28/2023	Kuhnle Brothers	AL5484	Frac tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,200	5,217	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
379	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252186	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,178	4,975	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
380	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252191	2/28/2023	Kuhnle Brothers	548A	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,107	5,107	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
381	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252234	2/28/2023	Kuhnle Brothers	AL4787	Frac tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,056	5,056	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
382	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011489	3/1/2023	Quality Carriers	AL4787	Frac Tank	820224	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,637	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
383	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011490	3/1/2023	Quality Carriers	AL5484	Frac Tank	4615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,521	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
384	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240620	3/1/2023	Quality Carriers	AL4787	Frac Tank	700606	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,977	4,977	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
385	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240621	3/1/2023	Quality Carriers	251026	Frac Tank	702192	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,200	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
386	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240622	3/1/2023	Quality Carriers	AL4755	Frac Tank	702130	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
387	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240623	3/1/2023	Quality Carriers	521B	Frac Tank	11341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,692	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
388	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240624	3/1/2023	Quality Carriers	AL4771	Frac tank	70579	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,354	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
389	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240882	3/1/2023	SJ Transportation	574B	Frac Tank	PT-4007	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,178	5,188	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
390	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240884	3/1/2023	SJ Transportation	521B/5324	Frac Tank	TV-246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,234	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
391	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240885	3/1/2023	SJ Transportation	AL4787	Frac tank	TV 226	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,872	5,012	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
392	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240888	3/1/2023	SJ Transportation	AL4787	Frac tank	TV 232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,068	5,139	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
393	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240889	3/1/2023	SJ Transportation	AL4787	Frac tank	TV 215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,872	5,392	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
394	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240953	3/1/2023	Kuhnle Brothers	AL4787	Frac Tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
395	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240954	3/1/2023	Kuhnle Brothers	AL4710	Frac Tank	647	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
396	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240955	3/1/2023	Kuhnle Brothers	AL4710 / AL 5484	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
397	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240956	3/1/2023	Kuhnle Brothers	AL5484	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,200	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
398	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240957	3/1/2023	Kuhnle Brothers	AL5484	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,065	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
399	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240958	3/1/2023	Kuhnle Brothers	AL5484	Frac tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
400	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240959	3/1/2023	Kuhnle Brothers	AL4710	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,039	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
401	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240960	3/1/2023	Kuhnle Brothers	AL8747	Frac tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,999	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
402	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252026	3/1/2023	Heniff Transportation	251056	Frac Tank	5588	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,250	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
403	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252027	3/1/2023	Heniff Transportation	521B	Frac Tank	CC70214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,273	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
404	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252028	3/1/2023	Heniff Transportation	532A	Frac Tank	5604	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
405	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252033	3/1/2023	Heniff Transportation	AL4771	Frac tank	CC70143	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,304	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
406	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252035	3/1/2023	Heniff Transportation	AL4755	Frac Tank	43245	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,216	5,106	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
407	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252036	3/1/2023	Heniff Transportation	AL4755/251026	Frac Tank	2995	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,197	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
408	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252063	3/1/2023	Heniff Transportation	AL4787	Frac tank	413162	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,968	4,968	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
409	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252064	3/1/2023	Heniff Transportation	574B	Frac Tank	43232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,129	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
410	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252236	3/1/2023	Kuhnle Brothers	AL4771	Frac tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
411	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252078	3/1/2023	Kuhnle Brothers	AL4787	Frac tank	529	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,046	5,046	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
412	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252079	3/1/2023	Kuhnle Brothers	AL4787	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,025	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
413	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252080	3/1/2023	Kuhnle Brothers	AL4787	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,013	5,013	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
414	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252103	3/1/2023	Heniff Transportation	AL4787/AL4710	Frac Tank	1582	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,058	5,058	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
415	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252105	3/1/2023	Heniff Transportation	AL5484/574B	Frac Tank	11-1295	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
416	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252124	3/1/2023	Enviroserve	AL4787/257362	Frac Tank	53364	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,940	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
417	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252133	3/1/2023	Enviroserve	AL4710	Frac Tank	25-418	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,139	4,139	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
418	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252138	3/1/2023	Kuhnle Brothers	AL4754	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,477	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
419	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252139	3/1/2023	Kuhnle Brothers	AL4710	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,180	5,790	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
420	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252140	3/1/2023	Kuhnle Brothers	521B	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,834	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
421	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252141	3/1/2023	Kuhnle Brothers	AL4787/251362	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,201	5,450	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
422	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252142	3/1/2023	Kuhnle Brothers	AL4754	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,102	4,605	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
423	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252143	3/1/2023	Kuhnle Brothers	AL4754	Frac Tank	843	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,105	4,539	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
424	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252144	3/1/2023	Kuhnle Brothers	AL4755	Frac Tank	1221	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,006	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
425	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252187	3/1/2023	Kuhnle Brothers	574B	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
426	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252188	3/1/2023	Kuhnle Brothers	251362	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,123	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
427	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252189	3/1/2023	Kuhnle Brothers	251362	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
428	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252192	3/1/2023	Kuhnle Brothers	AL4787/AL4710	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,891	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
429	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252193	3/1/2023	Kuhnle Brothers	AL4710/AL4787	Frac tank	879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
430	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252194	3/1/2023	Kuhnle Brothers	AL4710	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,039	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
431	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252197	3/1/2023	Kuhnle Brothers	AL4787	Frac Tank	1204	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
432	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252198	3/1/2023	Kuhnle Brothers	AL5484	Frac tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
433	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252233	3/1/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
434	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252235	3/1/2023	Kuhnle Brothers	AL4771	Frac tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
435	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252232	3/2/2023	Kuhnle Brothers	501F	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,963	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
436	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252255	3/1/2023	Kuhnle Brothers	532A	Frac Tank	1229	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,200	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
437	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252256	3/1/2023	Kuhnle Brothers	532A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
438	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252257	3/1/2023	Kuhnle Brothers	AL4755/ AL4754	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
439	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011437	3/2/2023	Robbie D Wood	531A	Frac Tank	SIRV118	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,141	4,591	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
440	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240625	3/2/2023	Quality Carriers	251362	Frac Tank	703446	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
441	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240626	3/2/2023	Quality Carriers	265276/ 256094	Frac Tank	701992	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,275	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
442	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240630	3/2/2023	Quality Carriers	256094	Frac Tank	703493	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,273	5,185	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
443	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240636	3/2/2023	Quality Carriers	251543	Frac Tank	1381	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,300	5,458	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
444	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240637	3/2/2023	Quality Carriers	252007	Frac Tank	702743	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,401	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
445	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240638	3/2/2023	Quality Carriers	251543	Frac Tank	W75208	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,045	5,134	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
446	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240639	3/2/2023	Quality Carriers	57400	Frac Tank	702400	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,276	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
447	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240640	3/2/2023	Quality Carriers	251079	Frac Tank	67775	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,285	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
448	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240641	3/2/2023	Quality Carriers	257400 / 251079	Frac Tank	702032	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
449	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240713	3/2/2023	Quality Carriers	AL4771/ 532A	Frac Tank	66117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,983	4,967	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
450	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240719	3/2/2023	Quality Carriers	AL4734/ AL4771	Frac Tank	701772	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,289	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
451	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240714	3/2/2023	Quality Carriers	5324	Frac Tank	702432	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
452	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240715	3/2/2023	Quality Carriers	AL4771/ AL4738	Frac Tank	701772	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,289	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
453	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240716	3/2/2023	Quality Carriers	266384	Frac Tank	702458	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,270	5,245	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
454	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240717	3/2/2023	Quality Carriers	257390	Frac Tank	CH7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,227	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
455	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240718	3/2/2023	Quality Carriers	521B	Frac Tank	KL613	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	5,264	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
456	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240720	3/2/2023	Quality Carriers	AL4735/ 531A	Frac Tank	CH7067	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,153	5,098	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
457	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240809	3/2/2023	Robbie D Wood	251091	Frac Tank	7741	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,522	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
458	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240810	3/2/2023	Robbie D Wood	265276	Frac Tank	7744	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,062	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
459	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240811	3/2/2023	Robbie D Wood	532A	Frac Tank	LT2285	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
460	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240976	3/2/2023	Quality Carriers	AL5484	Frac Tank	702753	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
461	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252029	3/2/2023	Heniff Transportation	251362	Frac Tank	916296	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,994	4,419	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
462	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252030	3/2/2023	Heniff Transportation	251362	Frac Tank	11-1225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,398	4,337	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
463	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252065	3/2/2023	Heniff Transportation	AL4787	Frac Tank	1572	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,062	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
464	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252066	3/2/2023	Heniff Transportation	AL4787	Frac Tank	11-462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,966	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
465	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252067	3/2/2023	Heniff Transportation	AL5484	Frac Tank	11-1085	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,984	4,798	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
466	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252068	3/2/2023	Heniff Transportation	AL5484	Frac Tank	3344	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,127	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
467	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252073	3/2/2023	Heniff Transportation	266384	Frac Tank	41-3792	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,250	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
468	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252074	3/2/2023	Heniff Transportation	266384	Frac Tank	5246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,220	5,354	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
469	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252075	3/2/2023	Heniff Transportation	AL4771	Frac Tank	11-644	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,257	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
470	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252106	3/2/2023	Heniff Transportation	252007	Frac Tank	21-1839	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,215	4,125	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
471	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252107	3/2/2023	Heniff Transportation	251079 / 251091	Frac Tank	43214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,304	5,629	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
472	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252108	3/2/2023	Heniff Transportation	251091	Frac tank	213927	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,393	5,524	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
473	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252109	3/2/2023	Heniff Transportation	256094	Frac Tank	21-3693	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
474	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252113	3/2/2023	Heniff Transportation	257400	Frac Tank	1863	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,237	5,644	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
475	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252114	3/2/2023	Heniff Transportation	501F / 257400	Frac Tank	11-733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,281	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
476	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252115	3/2/2023	Heniff Transportation	501B	Frac Tank	11938	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,268	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
477	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252116	3/2/2023	Heniff Transportation	501F	Frac Tank	211929	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,297	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
478	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252117	3/2/2023	Heniff Transportation	252007	Frac Tank	1755	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
479	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252118	3/2/2023	Heniff Transportation	252007	Frac Tank	211762	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,067	4,201	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
480	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252145	3/2/2023	Kuhnle Brothers	531A	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,140	4,772	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
481	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252146	3/2/2023	Kuhnle Brothers	513A	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,779	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
482	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252147	3/2/2023	Kuhnle Brothers	513A	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	5,056	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
483	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252148	3/2/2023	Kuhnle Brothers	251079	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,963	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
484	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252190	3/2/2023	Kuhnle Brothers	AL4771	Frac Tank	647	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,190	4,152	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
485	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252199	3/2/2023	Kuhnle Brothers	251543	Frac Tank	529	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,500	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
486	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252253	3/2/2023	Kuhnle Brothers	257925	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,963	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
487	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252251	3/2/2023	Kuhnle Brothers	253085	Frac Tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
488	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252252	3/2/2023	Kuhnle Brothers	253085	Frac Tank	17560	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
489	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252274	3/2/2023	Kuhnle Brothers	531A	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,217	5,304	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
490	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252254	3/2/2023	Kuhnle Brothers	257925	Frac Tank	647	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
491	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252263	3/2/2023	Kuhnle Brothers	257925	Frac tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
492	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252268	3/2/2023	Kuhnle Brothers	251091	Frac Tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	4,994	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
493	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252273	3/2/2023	Kuhnle Brothers	574B	Frac Tank	529	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,046	4,743	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
494	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252343	3/2/2023	Heniff Transportation	251091/265276	Frac Tank	21-3840	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,273	5,407	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
495	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252287	3/2/2023	Action Resources	PL4787	Frac Tank	TRI127	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	5,181	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
496	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252288	3/2/2023	Action Resources	AL4738	Frac Tank	749038	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,270	5,325	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
497	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252289	3/2/2023	Action Resources	251091/265276	Frac Tank	Sia 0087	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,273	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
498	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252292	3/2/2023	Action Resources	AL4738	Frac Tank	SIR0090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
499	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252307	3/2/2023	Heniff Transportation	513A/AL4738	Frac Tank	43237	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,129	5,253	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
500	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252308	3/2/2023	Heniff Transportation	AL4738	Frac Tank	LT1591	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,182	5,196	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
501	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252309	3/2/2023	Heniff Transportation	5324	Frac Tank	CC70154	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	5,126	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
502	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252310	3/2/2023	Heniff Transportation	532A	Frac Tank	7027UR	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
503	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252327	3/2/2023	Heniff Transportation	574B	Frac tank	43727	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,013	4,777	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
504	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252328	3/2/2023	Heniff Transportation	257390	Frac Tank	01127	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
505	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252340	3/2/2023	Heniff Transportation	257390	Frac tank	41-3845	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
506	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252341	3/2/2023	Heniff Transportation	586A/257390	Frac tank	70145	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,950	5,053	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
507	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252342	3/2/2023	Heniff Transportation	586A	Frac tank	4587	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	4,918	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
508	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252077	3/1/2023	Kuhnle Brothers	AL4787	Frac tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,025	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
509	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252344	3/2/2023	Heniff Transportation	AL4735	Frac Tank	11-1253	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,074	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
510	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240628	3/3/2023	Quality Carriers	251060	Frac Tank	702622	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
511	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240629	3/3/2023	Quality Carriers	574D	Frac Tank	CH7444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,180	5,007	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
512	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240712	3/3/2023	Quality Carriers	AC4735	Frac Tank	702611	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,328	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
513	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240722	3/3/2023	Quality Carriers	AC4375	Frac Tank	702661	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
514	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240974	3/3/2023	Robbie D Wood	251633	Frac Tank	LT-2206	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,281	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
515	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240978	3/3/2023	Quality Carriers	532A	Frac Tank	CH8119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,987	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
516	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240979	3/3/2023	Quality Carriers	261683	Frac Tank	702586	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,144	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
517	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240980	3/3/2023	Quality Carriers	251478	Frac Tank	703449	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,273	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
518	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240985	3/3/2023	Quality Carriers	257204	Frac Tank	7241	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,240	5,150	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
519	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240986	3/3/2023	Quality Carriers	251635	Frac Tank	702444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,282	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
520	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252031	3/3/2023	Heniff Transportation	532A	Frac Tank	11-1032	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,035	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
521	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252069	3/3/2023	Heniff Transportation	251683	Frac Tank	5337	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,986	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
522	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252071	3/3/2023	Heniff Transportation	530A/A4754	Frac Tank	43808	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
523	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252072	3/3/2023	Heniff Transportation	251683	Frac Tank	11-686	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,225	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
524	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252110	3/3/2023	Heniff Transportation	251060	Frac Tank	3134	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,127	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
525	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252266	3/3/2023	Kuhle Brothers	AL477/A4738	Frac Tank	995	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,018	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
526	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252275	3/3/2023	Kuhle Brothers	251478	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,900	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
527	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252283	3/3/2023	Action Resources	574D/507E	Frac Tank	SIR0061	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
528	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252290	3/3/2023	Action Resources	574D	Frac Tank	749043	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,191	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
529	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252291	3/3/2023	Action Resources	507F	Frac Tank	749061	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
530	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252329	3/3/2023	Heniff Transportation	251633	Frac Tank	CC7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,182	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
531	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252330	3/3/2023	Heniff Transportation	251321	Frac Tank	43829	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,255	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
532	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252331	3/3/2023	Heniff Transportation	251321	Frac Tank	21-1752	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
533	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252332	3/3/2023	Heniff Transportation	251321	Frac Tank	11-295	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,220	5,318	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
534	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252333	3/3/2023	Heniff Transportation	257204	Frac Tank	11-160	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	4,909	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
535	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252334	3/3/2023	Heniff Transportation	304	Frac Tank	1361	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,207	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
536	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252335	3/3/2023	Heniff Transportation	251060	Frac Tank	2275	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,257	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
537	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252337	3/3/2023	Heniff Transportation	251478	Frac Tank	21-1875	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,277	5,224	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
538	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252338	3/3/2023	Heniff Transportation	521B	Frac Tank	LT-1348	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,108	5,064	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
539	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252339	3/3/2023	Heniff Transportation	521B	Frac Tank	LT-1238	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,068	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
540	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252345	3/3/2023	Heniff Transportation	A4735/256043	Frac Tank	1981/907097	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,273	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
541	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252346	3/3/2023	Heniff Transportation	256043	Frac Tank	4887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,156	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
542	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252347	3/3/2023	Heniff Transportation	256043	Frac Tank	7025119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
543	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252378	3/3/2023	Quality Carriers	AL4755	Frac Tank	702404	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	3,923	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
544	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252380	3/3/2023	Quality Carriers	251026	Frac Tank	703171	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,035	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
545	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252385	3/3/2023	Quality Carriers	AL4754	Frac Tank	CH7922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,095	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
546	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252386	3/3/2023	Quality Carriers	532A	Frac Tank	701486	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,035	4,844	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
547	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252387	3/3/2023	Quality Carriers	521B	Frac Tank	67188	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,113	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
548	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252388	3/3/2023	Heniff Transportation	521B	Frac Tank	212138	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,093	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
549	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252389	3/3/2023	Heniff Transportation	AL4754	Frac Tank	702436	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,173	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
550	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252390	3/3/2023	Heniff Transportation	AL4755	Frac Tank	21-1748	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,067	4,361	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
551	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252391	3/3/2023	Heniff Transportation	AL4755	Frac Tank	43796	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,064	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
552	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252392	3/3/2023	Heniff Transportation	AL4755	Frac Tank	11-654	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
553	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252394	3/3/2023	Heniff Transportation	251026	Frac Tank	41-3468	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,122	4,003	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
554	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252423	3/3/2023	Heniff Transportation	AL4738	Frac Tank	11227	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
555	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252424	3/3/2023	Heniff Transportation	AL4771	Frac Tank	524	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,837	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
556	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252426	3/3/2023	Heniff Transportation	AL4771	Frac Tank	11-358	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,995	4,805	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
557	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252427	3/3/2023	Heniff Transportation	251026/ AL4771	Frac Tank	11-1128	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
558	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240723	3/4/2023	Quality Carriers	572A	Frac Tank	702809	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,183	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
559	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240724	3/4/2023	Quality Carriers	572A/ 593D	Frac Tank	H7179	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,154	5,063	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
560	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240728	3/4/2023	Quality Carriers	566B	Frac Tank	702388	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,276	5,398	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
561	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252070	3/4/2023	Heniff Transportation	593D	Frac Tank	11-274	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,247	5,214	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
562	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252076	3/4/2023	Heniff Transportation	572A	Frac Tank	43771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,135	5,200	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
563	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252111	3/4/2023	Heniff Transportation	566B/57 2A	Frac Tank	00598	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,861	4,880	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
564	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252112	3/4/2023	Heniff Transportation	AL5645	Frac Tank	413019	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,360	4,152	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
565	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252182	3/4/2023	SJ Transportation	511 A	Frac Tank	TV226	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,978	3,693	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
566	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252224	3/4/2023	Kuhle Brothers	251362	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
567	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252225	3/4/2023	Kuhle Brothers	251362	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
568	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252285	3/4/2023	Action Resources	507F	Frac Tank	SIR0005	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	5,187	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
569	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252286	3/4/2023	Action Resources	AL4771	Frac Tank	SIR0043	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,100	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
570	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252311	3/4/2023	Heniff Transportation	593D	Frac Tank	21-3691	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,608	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
571	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252312	3/4/2023	Heniff Transportation	593D	Frac Tank	1819	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,268	5,313	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
572	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252314	3/4/2023	Heniff Transportation	566B	Frac Tank	21-2017	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,297	4,613	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
573	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252316	3/4/2023	Heniff Transportation	LTI- 130/521 B	Frac Tank	11-952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,030	4,882	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
574	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252317	3/4/2023	Heniff Transportation	507D/57 4D	Frac Tank	50044	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,182	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
575	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252319	3/4/2023	Heniff Transportation	AL4771/ LTI-130	Frac Tank	11-678	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,127	5,002	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
576	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252320	3/4/2023	Heniff Transportation	LTI-130	Frac Tank	21-1920	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,054	4,957	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
577	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252321	3/4/2023	Heniff Transportation	LTI-130	Frac Tank	3135	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,951	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
578	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252323	3/4/2023	Heniff Transportation	AL4771	Frac Tank	4892	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	5,050	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
579	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252324	3/4/2023	Heniff Transportation	AL4738	Frac Tank	41-3956	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,027	4,508	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
580	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252325	3/4/2023	Heniff Transportation	AL4738	Frac Tank	21-1747	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,067	4,044	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
581	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252326	3/4/2023	Heniff Transportation	AL4783	Frac Tank	1969	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,122	5,160	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
582	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252336	3/4/2023	Heniff Transportation	572A	Frac Tank	49-0477	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,125	4,002	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
583	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252349	3/4/2023	Quality Carriers	AL4783/ AL4771	Frac Tank	702805	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	4,248	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
584	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252357	3/4/2023	Quality Carriers	521B	Frac Tank	67126	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,900	4,226	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
585	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252358	3/4/2023	Quality Carriers	AL5465	Frac Tank	702737	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,268	4,271	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
586	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252363	3/4/2023	Quality Carriers	241650	Frac Tank	702105	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,149	4,556	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
587	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252376	3/4/2023	Quality Carriers	AL4754/ 25102G	Frac Tank	5563	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,048	4,973	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
588	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252377	3/4/2023	Quality Carriers	AL4754	Frac Tank	703502	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,040	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
589	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252395	3/4/2023	Heniff Transportation	521B	Frac Tank	CD08	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,033	4,150	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
590	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252396	3/4/2023	Heniff Transportation	521B	Frac Tank	21-1931	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,054	4,002	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
591	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252397	3/4/2023	Heniff Transportation	251362	Frac Tank	11-1090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,112	4,935	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
592	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252411	3/4/2023	Heniff Transportation	513A	Frac Tank	11-1246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,027	5,031	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
593	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252412	3/4/2023	Heniff Transportation	566384/ 513A	Frac Tank	2615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,017	5,304	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
594	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252413	3/4/2023	Heniff Transportation	266384	Frac Tank	3356	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,926	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
595	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252414	3/4/2023	Heniff Transportation	521B/AL 4754	Frac Tank	1434	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,064	5,266	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
596	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252415	3/4/2023	Heniff Transportation	572A/50 7F	Frac Tank	CC70104	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,182	4,997	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
597	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252416	3/4/2023	Heniff Transportation	AL5465	Frac Tank	41-3663	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,500	4,546	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
598	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252417	3/4/2023	Heniff Transportation	AL5465	Frac Tank	61659	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	3,100	2,933	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
599	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252418	3/4/2023	Heniff Transportation	251650	Frac Tank	21-1716	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,026	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
600	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252419	3/4/2023	Heniff Transportation	511A	Frac Tank	1753	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,872	5,014	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
601	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252420	3/4/2023	Heniff Transportation	511A	Frac Tank	41-3990	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,204	5,258	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
602	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252421	3/4/2023	Heniff Transportation	507F	Frac Tank	11-1276	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,155	5,311	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
603	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252422	3/4/2023	Heniff Transportation	572A	Frac Tank	11-609	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,225	4,858	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
604	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252431	3/4/2023	Kuhle Brothers	251362/ AL4787	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
605	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252494	3/4/2023	Allom Transport	25102G	Frac Tank	T21501	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,865	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
606	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252495	3/4/2023	Action Resources	566B	Frac Tank	749006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	4,522	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
607	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252496	3/4/2023	Action Resources	266384	Frac Tank	SIR0098	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,035	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
608	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252497	3/4/2023	Action Resources	LTI-130	Frac Tank	SIR0087	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,084	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
609	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253532	3/4/2023	Action Resources	251650	Frac Tank	749035	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,281	4,985	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
610	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253533	3/4/2023	Action Resources	513A	Frac Tank	749a2	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,954	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
611	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126936	3/5/2023	SJ Transportation	AL-5484	Frac Tank	TV-232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	4,798	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
612	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240631	3/5/2023	Quality Carriers	AL4787	Frac Tank	702495	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,325	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
613	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240632	3/5/2023	Quality Carriers	AL4710	Frac Tank	701580	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,106	3,966	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
614	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240726	3/5/2023	Quality Carriers	256043	Frac Tank	703113	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,889	4,964	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
615	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252149	3/5/2023	Kuhnle Brothers	532A	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
616	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252150	3/5/2023	Kuhnle Brothers	AL4735	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
617	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252151	3/5/2023	Kuhnle Brothers	521B	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,100	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
618	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252152	3/5/2023	Kuhnle Brothers	256043	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
619	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252153	3/5/2023	Kuhnle Brothers	532A	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,200	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
620	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252227	3/5/2023	Kuhnle Brothers	AL4710/ AL5484	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
621	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252228	3/5/2023	Kuhnle Brothers	AL5484/ 574B	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
622	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252229	3/5/2023	Kuhnle Brothers	574B	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
623	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252230	3/5/2023	Kuhnle Brothers	574B	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
624	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252231	3/5/2023	Kuhnle Brothers	531A	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
625	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252351	3/5/2023	Quality Carriers	513A	Frac Tank	701865	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,028	3,887	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
626	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252398	3/5/2023	Heniff Transportation	531A	Frac Tank	8020	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,159	4,620	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
627	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252399	3/5/2023	Heniff Transportation	251788	Frac Tank	11-7708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,066	4,469	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
628	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252432	3/5/2023	Kuhnle Brothers	AL4735	Frac Tank	1256043/497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
629	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252442	3/5/2023	Kuhnle Brothers	251788	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
630	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252443	3/5/2023	Kuhnle Brothers	256043	Frac Tank	1008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,200	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
631	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252445	3/5/2023	Kuhnle Brothers	513A	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
632	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252446	3/5/2023	Kuhnle Brothers	AL4738	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
633	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252447	3/5/2023	Kuhnle Brothers	AL4738	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
634	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252448	3/5/2023	Kuhnle Brothers	AL4738 / AL4771	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
635	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252449	3/5/2023	Kuhnle Brothers	AL4771/ 532A	Frac Tank	1008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
636	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252450	3/5/2023	Kuhnle Brothers	521B	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
637	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252451	3/5/2023	Kuhnle Brothers	AL4754	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
638	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252452	3/5/2023	Kuhnle Brothers	AL4735	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
639	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252461	3/5/2023	Kuhnle Brothers	531A	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
640	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252463	3/5/2023	Kuhnle Brothers	266384/513A	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
641	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252464	3/5/2023	Kuhnle Brothers	266384	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
642	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252465	3/5/2023	Kuhnle Brothers	266384	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
643	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253501	3/5/2023	Vickery Transportation	AL4710	Frac Tank	6423	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	4,832	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
644	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253502	3/5/2023	Vickery Transportation	531A	Frac Tank	LT1621	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,146	4,887	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
645	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253503	3/5/2023	Vickery Transportation	256043	Frac Tank	VT 708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,889	4,784	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
646	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253504	3/5/2023	Vickery Transportation	AL4735	Frac Tank	7613	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,994	5,067	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
647	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253522	3/5/2023	Vickery Transportation	521B/AL4754	Frac Tank	BV704	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	5,012	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
648	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253557	3/5/2023	US Ecology Transportation	266240	Frac Tank	3080	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,400	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
649	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253570	3/5/2023	Heniff Transportation	513A	Frac Tank	HEC05	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,062	4,103	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
650	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253571	3/5/2023	Heniff Transportation	AL4738	Frac Tank	11-1198	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	5,090	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
651	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253572	3/5/2023	Heniff Transportation	AL4738	Frac Tank	589	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,797	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
652	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253573	3/5/2023	Heniff Transportation	AL4771	Frac Tank	11-785	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,987	3,652	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
653	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253574	3/5/2023	Heniff Transportation	AL4771	Frac Tank	41-2063	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,092	3,990	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
654	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253575	3/5/2023	Heniff Transportation	521B	Frac Tank	1582	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,058	5,225	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
655	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253581	3/5/2023	Heniff Transportation	532A/521B	Frac Tank	1779	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,093	3,905	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
656	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253582	3/5/2023	Heniff Transportation	532A	Frac Tank	8023	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,982	3,726	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
657	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253595	3/5/2023	Heniff Transportation	256043	Frac Tank	21-3937	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,885	4,871	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
658	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253597	3/5/2023	Heniff Transportation	251788/256043	Frac Tank	21-3851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,893	4,264	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
659	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252209	3/6/2023	Kuhnle Brothers	531A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
660	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252210	3/6/2023	Kuhnle Brothers	574B	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,023	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
661	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252211	3/6/2023	Kuhnle Brothers	574B	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,005	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
662	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252213	3/6/2023	Kuhnle Brothers	251026	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
663	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252214	3/6/2023	Kuhnle Brothers	251026	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
664	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252220	3/6/2023	Kuhnle Brothers	251026/521B	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
665	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252221	3/6/2023	Kuhnle Brothers	251026	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
666	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252222	3/6/2023	Kuhnle Brothers	AL4755/251026	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,057	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
667	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252354	3/6/2023	Quality Carriers	AL5484	Frac Tank	703446	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	4,719	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
668	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252364	3/6/2023	Quality Carriers	AL4735	Frac Tank	703101	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,762	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
669	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252370	3/6/2023	Quality Carriers	574B	Frac Tank	702753	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,200	5,093	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
670	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252371	3/6/2023	Quality Carriers	521B	Frac Tank	65696	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,103	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
671	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252374	3/6/2023	Quality Carriers	521B	Frac Tank	MT7018	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,016	5,151	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
672	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252453	3/6/2023	Kuhnle Brothers	AL5484	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
673	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252454	3/6/2023	Kuhnle Brothers	AL5484	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
674	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252457	3/6/2023	Kuhnle Brothers	531A/AL5484	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
675	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252458	3/6/2023	Kuhnle Brothers	574B	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
676	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252460	3/6/2023	Kuhnle Brothers	531A	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
677	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252462	3/6/2023	Kuhnle Brothers	AL5735/531A	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
678	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253507	3/6/2023	Vickery Transportation	531A	Frac Tank	LT-888	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,100	5,091	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
679	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253508	3/6/2023	Vickery Transportation	574B	Frac Tank	7730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,148	4,815	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
680	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253524	3/6/2023	Vickery Transportation	531A	Frac Tank	63753	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,020	3,947	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
681	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253558	3/6/2023	Heniff Transportation	574B	Frac Tank	01137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,182	3,593	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
682	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253559	3/6/2023	Heniff Transportation	531A	Frac Tank	11-879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,968	5,044	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
683	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253560	3/6/2023	Heniff Transportation	AL4735/574B	Frac Tank	1327	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,949	5,192	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
684	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253561	3/6/2023	Heniff Transportation	574B/531A	Frac Tank	11-762	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,018	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
685	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253562	3/6/2023	Heniff Transportation	574B	Frac Tank	8008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,986	4,661	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
686	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253563	3/6/2023	Heniff Transportation	574B	Frac Tank	4885	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,398	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
687	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253569	3/6/2023	Heniff Transportation	AL4755	Frac Tank	21-1965	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,054	4,793	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
688	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253624	3/6/2023	Heniff Transportation	AL4735/574B	Frac Tank	43232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,010	5,081	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
689	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253625	3/6/2023	Heniff Transportation	AL4735	Frac Tank	43791	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,890	4,317	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
690	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253626	3/6/2023	Heniff Transportation	574B	Frac Tank	11-652	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,962	3,705	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
691	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253627	3/6/2023	Heniff Transportation	531A/574B	Frac Tank	DM26	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,086	4,046	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
692	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253630	3/6/2023	Robbie D Wood	AL4755	Frac Tank	7744	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,251	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
693	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253663	3/6/2023	Altom Transport	574B	Frac Tank	T21635	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,962	4,865	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
694	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252375	3/6/2023	Quality Carriers	AL4755	Frac Tank	67775	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,030	5,041	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
695	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252216	3/6/2023	Kuhnle Brothers	532A/AL4771	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
696	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252215	3/6/2023	Kuhnle Brothers	532A	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
697	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253510	3/6/2023	Vickery Transportation	532A	Frac Tank	7421	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,055	3,637	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
698	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252219	3/6/2023	Kuhnle Brothers	532A	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
699	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253568	3/6/2023	Heniff Transportation	521B/532A	Frac Tank	11-884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,194	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
700	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253521	3/6/2023	Vickery Transportation	AL4754/AL4755	Frac Tank	7444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,016	4,466	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
701	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252476	3/6/2023	Kuhnle Brothers	574B	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
702	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253564	3/6/2023	Heniff Transportation	AL4754	Frac Tank	43253	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,397	4,352	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
703	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252466	3/6/2023	Kuhnle Brothers	574B	Frac Tank	1008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,961	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
704	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252212	3/6/2023	Kuhnle Brothers	AL4754	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
705	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253530	3/6/2023	Vickery Transportation	574B	Frac Tank	63745	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,077	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
706	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252475	3/6/2023	Kuhnle Brothers	574B	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
707	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253529	3/6/2023	Vickery Transportation	AL4735	Frac Tank	05849	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	5,040	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
708	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252490	3/6/2023	Kuhnle Brothers	AL4771/AL4738	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
709	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252218	3/6/2023	Kuhnle Brothers	AL4771	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
710	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253567	3/6/2023	Heniff Transportation	AL4771	Frac Tank	11764	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,055	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
711	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252217	3/6/2023	Kuhnle Brothers	AL4738	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
712	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252158	3/6/2023	Kuhnle Brothers	AL4738	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,065	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
713	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252489	3/6/2023	Kuhnle Brothers	AL4738/513A	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
714	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252369	3/6/2023	Quality Carriers	AL4735	Frac Tank	11341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,962	4,399	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
715	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253525	3/6/2023	Vickery Transportation	AL4735	Frac Tank	KL751	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,048	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
716	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252157	3/6/2023	Kuhnle Brothers	513A/266384	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
717	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253511	3/6/2023	Vickery Transportation	513A	Frac Tank	7071	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
718	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253520	3/6/2023	Vickery Transportation	AL4738	Frac Tank	KL725	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,082	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
719	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253519	3/6/2023	Vickery Transportation	513A	Frac Tank	3069	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	4,755	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
720	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252155	3/6/2023	Kuhnle Brothers	AL4735	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,827	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
721	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252156	3/6/2023	Kuhnle Brothers	AL4735	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,201	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
722	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252154	3/6/2023	Kuhnle Brothers	AL4735	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
723	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252365	3/6/2023	Quality Carriers	AL4735	Frac Tank	703454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,599	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
724	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252459	3/6/2023	Kuhnle Brothers	531A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
725	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252204	3/8/2023	Kuhnle Brothers	531A	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
726	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252486	3/7/2023	Kuhnle Brothers	574B/AL5484	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
727	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252485	3/7/2023	Kuhnle Brothers	AL5484	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,700	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
728	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252276	3/6/2023	Kuhnle Brothers	574B	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
729	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252487	3/6/2023	Kuhnle Brothers	574B	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
730	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252488	3/6/2023	Kuhnle Brothers	AL4735/531A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
731	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252184	3/6/2023	SJ Transportation	574B	Frac Tank	PT4007	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,178	5,019	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
732	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253565	3/6/2023	Heniff Transportation	531A	Frac Tank	41-3792	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	5,019	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
733	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253593	3/6/2023	Heniff Transportation	531A	Frac Tank	3RG23150	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,736	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
734	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240634	3/6/2023	Quality Carriers	531A	Frac Tank	720720	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	3,878	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
735	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240727	3/6/2023	Quality Carriers	531A/574B	Frac Tank	CH7913	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	5,201	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
736	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252368	3/8/2023	Quality Carriers	531A	Frac Tank	703171	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,148	4,705	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
737	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252250	3/7/2023	Kuhnle Brothers	AL5484	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
738	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252206	3/8/2023	Kuhnle Brothers	531A	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
739	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253599	3/8/2023	Heniff Transportation	531A	Frac Tank	43217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,116	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
740	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252205	3/8/2023	Kuhnle Brothers	531A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
741	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252480	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
742	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252479	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
743	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252478	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
744	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253609	3/7/2023	Heniff Transportation	AL4735	Frac Tank	43698	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,951	3,996	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
745	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252477	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,039	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
746	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253684	3/7/2023	Quality Carriers	566E	Frac Tank	70579	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,895	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
747	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252237	3/7/2023	Kuhnle Brothers	566E	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
748	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253697	3/7/2023	Quality Carriers	566E	Frac Tank	702130	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,276	4,518	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
749	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253610	3/7/2023	Heniff Transportation	566E/538B	Frac Tank	11-776	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,531	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
750	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252238	3/7/2023	Kuhnle Brothers	538B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
751	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252481	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
752	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252483	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
753	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252359	3/7/2023	Quality Carriers	AL4735	Frac Tank	702511	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	4,817	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
754	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253576	3/7/2023	Heniff Transportation	AL4735	Frac Tank	41-3199	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,971	3,523	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
755	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240633	3/7/2023	Quality Carriers	AL4735	Frac Tank	702192	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,747	4,734	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
756	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252484	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
757	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252246	3/7/2023	Kuhnle Brothers	538B/257728	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
758	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253685	3/7/2023	Quality Carriers	538B	Frac Tank	66164	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,102	5,004	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
759	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253566	3/7/2023	Heniff Transportation	251782	Frac Tank	21-2014	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,054	3,974	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
760	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253696	3/7/2023	Quality Carriers	257728/251782	Frac Tank	67188	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,113	4,193	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
761	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253686	3/7/2023	Quality Carriers	257728	Frac Tank	CH7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	5,062	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
762	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252159	3/7/2023	Kuhnle Brothers	257728	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
763	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252161	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,200	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
764	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252366	3/7/2023	Quality Carriers	AL4735	Frac Tank	65727	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,043	5,084	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
765	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252373	3/7/2023	Quality Carriers	AL4735	Frac Tank	4615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,954	4,810	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
766	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253607	3/7/2023	Heniff Transportation	AL4735	Frac Tank	3RG23144	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	5,166	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
767	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252185	3/7/2023	SJ Transportation	253085/252007	Frac Tank	TV-246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,029	4,517	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
768	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253577	3/7/2023	Heniff Transportation	253085	Frac Tank	LT-1591	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,002	4,429	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
769	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252455	3/7/2023	Kuhnle Brothers	253085	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
770	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252400	3/7/2023	Heniff Transportation	253085	Frac Tank	11-316	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,898	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
771	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252223	3/7/2023	Kuhnle Brothers	253085	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,068	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
772	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253641	3/7/2023	SJ Transportation	257761	Frac Tank	TV-249	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,834	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
773	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253689	3/7/2023	Quality Carriers	257761	Frac Tank	702458	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,144	5,074	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
774	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253623	3/7/2023	Heniff Transportation	257761	Frac Tank	41-3204	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,062	3,871	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
775	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252163	3/7/2023	Kuhnle Brothers	251688	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
776	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253695	3/7/2023	Quality Carriers	251688	Frac Tank	703493	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,081	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
777	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253688	3/7/2023	Quality Carriers	251782/251688	Frac Tank	702400	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	4,046	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
778	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253644	3/7/2023	Robbie D Wood	251782	Frac Tank	SIRV149	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	4,764	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
779	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252244	3/7/2023	Kuhnle Brothers	251871	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
780	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252240	3/7/2023	Kuhnle Brothers	251871	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
781	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252239	3/7/2023	Kuhnle Brothers	257761	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
782	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252245	3/7/2023	Kuhnle Brothers	257761	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
783	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240729	3/7/2023	Quality Carriers	252007	Frac Tank	701682	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,302	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
784	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252456	3/7/2023	Kuhnle Brothers	252007	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,295	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
785	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253578	3/7/2023	Heniff Transportation	252007	Frac Tank	5246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,220	4,872	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
786	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253651	3/7/2023	Robbie D Wood	252007/501F	Frac Tank	7741	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	4,793	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
787	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240730	3/7/2023	Quality Carriers	501F	Frac Tank	66117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,983	4,823	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
788	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253583	3/7/2023	Heniff Transportation	AL4735	Frac Tank	21-3414	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
789	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253584	3/7/2023	Heniff Transportation	AL4735	Frac Tank	3RG23137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,980	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
790	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252160	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
791	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025252162	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,065	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
792	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253598	3/7/2023	Heniff Transportation	AL4735	Frac Tank	43237	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,010	5,093	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
793	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252441	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,065	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
794	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252473	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
795	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252482	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
796	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253654	3/7/2023	Altom Transport	501F	Frac Tank	T-21272	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,300	3,962	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
797	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240973	3/7/2023	Robbie D Wood	501F	Frac Tank	SIRV122	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	2,782	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
798	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252440	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
799	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253506	3/7/2023	Vickery Transportation	251871/252651	Frac Tank	T-723	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,110	5,309	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
800	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253611	3/7/2023	Heniff Transportation	251871	Frac Tank	43847	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	5,186	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
801	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253687	3/7/2023	Quality Carriers	266384	Frac Tank	703099	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,088	4,280	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
802	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253648	3/7/2023	Quality Carriers	252651	Frac Tank	7976	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	5,206	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
803	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252208	3/8/2023	Kuhnle Brothers	531A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
804	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252249	3/7/2023	Kuhnle Brothers	AL5484	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
805	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253646	3/8/2023	Robbie D Wood	531A	Frac Tank	7901	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,176	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
806	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253628	3/7/2023	Robbie D Wood	AL5485	Frac Tank	LT-2212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,123	4,817	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
807	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252248	3/7/2023	Kuhnle Brothers	AL5485/AL4735/250043	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
808	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252207	3/8/2023	Kuhnle Brothers	531A	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
809	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252247	3/7/2023	Kuhnle Brothers	250043	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
810	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252361	3/8/2023	Quality Carriers	531A	Frac Tank	702611	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
811	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253594	3/7/2023	Heniff Transportation	250043	Frac Tank	11462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,949	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
812	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252362	3/8/2023	Quality Carriers	531A	Frac Tank	702032	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5150	4,228	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
813	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252404	3/8/2023	Heniff Transportation	256043	Frac Tank	CC7060	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,102	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
814	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252471	3/8/2023	Kuhnle Brothers	256043	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
815	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253580	3/7/2023	Heniff Transportation	AL4735	Frac Tank	CC7091	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,197	5,108	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
816	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252200	3/7/2023	Kuhnle Brothers	AL4735	Frac Tank	457	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
817	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252470	3/8/2023	Kuhnle Brothers	256043/531A	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
818	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252405	3/8/2023	Heniff Transportation	531A	Frac Tank	1884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,012	4,614	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
819	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252201	3/7/2023	Kuhnle Brothers	AL4735/256043	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
820	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252469	3/8/2023	Kuhnle Brothers	531A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
821	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253647	3/7/2023	Robbie D Wood	256043	Frac Tank	8124	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,148	5,105	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
822	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253600	3/8/2023	Heniff Transportation	AL5484	Frac Tank	1880	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4765	4,388	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
823	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253605	3/8/2023	Heniff Transportation	AL5484	Frac tank	11-1085	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4984	5,019	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
824	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253606	3/8/2023	Heniff Transportation	AL5484	Frac Tank	11-1293	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4962	4,982	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
825	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253775	3/8/2023	Kuhnle Brothers	AL5484/AL4735	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
826	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252242	3/8/2023	Kuhnle Brothers	AL4735	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
827	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253713	3/8/2023	Quality Carriers	AL4735	Frac Tank	703449	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5019	4,954	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
828	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253604	3/8/2023	Heniff Transportation	AL4735/531A	Frac Tank	70272R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4885	4,910	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
829	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253603	3/8/2023	Heniff Transportation	531A	Frac Tank	41-3736	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5000	3,815	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
830	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252434	3/8/2023	Kuhnle Brothers	531A	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
831	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252433	3/8/2023	Kuhnle Brothers	531A	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5065	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
832	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126944	3/8/2023	Quality Carriers	AL4738/513A	Frac Tank	KL613	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5000	4,194	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
833	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253813	3/8/2023	Kuhnle Brothers	513A	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
834	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126945	3/8/2023	Quality Carriers	513A	Frac Tank	CH8978	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5025	4,518	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
835	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253798	3/8/2023	Kuhnle Brothers	266384	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
836	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240984	3/8/2023	Quality Carriers	266384	Frac Tank	702222	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
837	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253823	3/8/2023	Kuhnle Brothers	266384	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
838	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253726	3/8/2023	Heniff Transportation	AL4738	Frac Tank	21-1828	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,031	4,675	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
839	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253645	3/8/2023	Robbie D Wood	513A	Frac Tank	LT-2237	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,027	4,471	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
840	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253712	3/8/2023	Quality Carriers	266384/513A	Frac Tank	701772	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,034	4,021	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
841	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240983	3/8/2023	Quality Carriers	266384	Frac Tank	LA7045	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,019	3,710	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
842	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253730	3/8/2023	Heniff Transportation	AL4738	Frac Tank	1711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	4,997	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
843	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253814	3/8/2023	Kuhnle Brothers	AL4738	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
844	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126943	3/8/2023	Quality Carriers	AL4738/AL4771	Frac Tank	701992	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,022	4,026	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
845	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252435	3/8/2023	Kuhnle Brothers	AL4710	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
846	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252401	3/8/2023	Heniff Transportation	AL4710	Frac Tank	11-686	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,127	4,839	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
847	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253601	3/8/2023	Heniff Transportation	AL4710/574B	Frac Tank	3RG23178	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,026	5,091	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
848	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253732	3/8/2023	Heniff Transportation	AL4771	Frac Tank	3343	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,655	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
849	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253629	3/8/2023	Robbie D Wood	AL4771	Frac Tank	LT-2267	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
850	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253731	3/8/2023	Heniff Transportation	AL4771	Frac Tank	21-3693	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,027	4,146	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
851	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253779	3/8/2023	Kuhnle Brothers	AL4771/LTI-130	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
852	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253778	3/8/2023	Kuhnle Brothers	532A	Frac Tank	1006	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
853	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240580	3/8/2023	Heniff Transportation	251079	Frac Tank	2995	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,050	4,429	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
854	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253796	3/8/2023	Kuhnle Brothers	251079	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
855	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240579	3/8/2023	Heniff Transportation	251079/257400	Frac Tank	50034B	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,046	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
856	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252402	3/8/2023	Heniff Transportation	AL4735	Frac Tank	3134	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,995	5,089	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
857	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252437	3/8/2023	Kuhnle Brothers	256043	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
858	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252472	3/8/2023	Kuhnle Brothers	AL4735	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
859	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253652	3/8/2023	Robbie D Wood	AL4735	Frac Tank	LT2279	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,994	4,566	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
860	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253612	3/8/2023	Heniff Transportation	AL4735	Frac Tank	1593	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,904	4,622	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
861	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253733	3/8/2023	Heniff Transportation	532A	Frac Tank	1959	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,032	4,875	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
862	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253716	3/8/2023	Heniff Transportation	251091	Frac Tank	CC7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,521	4,518	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
863	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253754	3/8/2023	Heniff Transportation	251091	Frac Tank	21-1922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,116	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
864	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253763	3/8/2023	Heniff Transportation	251091	Frac Tank	5251	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,898	4,841	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
865	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011415	3/8/2023	Quality Carriers	265276	Frac Tank	702464	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
866	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126942	3/8/2023	Quality Carriers	532A	Frac Tank	702805	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
867	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253795	3/8/2023	Kuhnle Brothers	251091/265276	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
868	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253531	3/8/2023	Action Resources	AL4771	Frac Tank	563	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,062	4,822	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
869	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253719	3/8/2023	Heniff Transportation	252007	Frac Tank	11-143	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,635	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
870	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253720	3/8/2023	Heniff Transportation	252007	Frac Tank	CC70177	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,018	4,532	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
871	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253721	3/8/2023	Heniff Transportation	Not listed	Frac Tank	1558	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,052	4,982	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
872	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253722	3/8/2023	Heniff Transportation	501F	Frac Tank	41-3082	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,034	4,261	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
873	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253714	3/8/2023	Heniff Transportation	501F	Frac Tank	21-3840	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	4,798	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
874	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253717	3/8/2023	Heniff Transportation	253085	Frac Tank	1117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,909	3,710	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
875	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253715	3/8/2023	Heniff Transportation	253085/257400	Frac Tank	LT-1961	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,090	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
876	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253784	3/8/2023	Kuhnle Brothers	253085/252009	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
877	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252241	3/8/2023	Kuhnle Brothers	574B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
878	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252436	3/8/2023	Kuhnle Brothers	256043	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
879	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252438	3/8/2023	Kuhnle Brothers	AL4710	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,784	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
880	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253797	3/8/2023	Kuhnle Brothers	257400	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
881	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253780	3/8/2023	Kuhnle Brothers	256043	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
882	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253782	3/8/2023	Kuhnle Brothers	251091/251079	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,850	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
883	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253781	3/8/2023	Kuhnle Brothers	574B	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,201	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
884	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253783	3/8/2023	Kuhnle Brothers	574B	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
885	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253776	3/8/2023	Kuhnle Brothers	253085	Frac Tank	342	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
886	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253636	3/8/2023	SJ Transportation	501F/252007	Frac Tank	PT-4013	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,025	4,887	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
887	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240981	3/8/2023	Quality Carriers	501F	Frac Tank	703498	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,000	2,491	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
888	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253694	3/8/2023	Quality Carriers	AL5484/574B	Frac Tank	702812	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,957	4,194	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
889	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253512	3/8/2023	Vickery Transportation	257400	Frac Tank	05850	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,014	4,858	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
890	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253534	3/8/2023	Action Resources	531A	Frac Tank	SIR0010	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,147	5,102	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
891	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252202	3/7/2023	Kuhnle Brothers	256043	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
892	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252467	3/8/2023	Kuhnle Brothers	531A/AL4710	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
893	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253579	3/7/2023	Heniff Transportation	256043	Frac Tank	CC7076	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,178	5,148	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
894	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252468	3/8/2023	Kuhnle Brothers	AL4710	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
895	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252203	3/7/2023	Kuhnle Brothers	531A	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
896	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252406	3/8/2023	Heniff Transportation	AL4710	Frac Tank	LT-1238	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,154	5,143	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
897	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252360	3/7/2023	Quality Carriers	531A	Frac Tank	702763	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	4,076	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
898	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253815	3/8/2023	Kuhnle Brothers	AL4710/574B	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
899	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253608	3/7/2023	Heniff Transportation	531A	Frac Tank	00987	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	3,750	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
900	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252407	3/8/2023	Heniff Transportation	574B	Frac Tank	43808	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,131	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
901	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253812	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
902	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253817	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
903	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253822	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
904	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253821	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
905	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253820	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
906	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253818	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
907	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253816	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
908	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011414	3/9/2023	Quality Carriers	AL4710	Frac Tank	702806	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
909	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252408	3/9/2023	Heniff Transportation	AL4710	Frac Tank	11-733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
910	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252410	3/9/2023	Heniff Transportation	AL4710	Frac Tank	70251R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
911	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253658	3/9/2023	Altom Transport	AL4710	Frac Tank	T21658	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
912	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253659	3/9/2023	Altom Transport	AL4710	Frac Tank	T21655	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
913	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253811	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
914	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253613	3/9/2023	Heniff Transportation	AL4710	Frac Tank	4887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,156	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
915	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126941	3/9/2023	Quality Carriers	AL4710	Frac Tank	702836	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,989	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
916	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253805	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
917	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253591	3/9/2023	Heniff Transportation	AL4710	Frac Tank	3133	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
918	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253809	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
919	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253590	3/9/2023	Heniff Transportation	AL4710	Frac Tank	11160	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,992	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
920	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253589	3/9/2023	Heniff Transportation	AL4710	Frac Tank	1607	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,955	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
921	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253588	3/9/2023	Heniff Transportation	AL4710	Frac Tank	4978	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
922	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253919	3/9/2023	Action Resources	AL4754	Frac Tank	SIR0076	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
923	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253800	3/9/2023	Kuhnle Brothers	521B/AL4754	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
924	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253854	3/9/2023	Quality Carriers	AL4754	Frac Tank	700606	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,074	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
925	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253683	3/9/2023	Vickery Transportation	AL4710	Frac Tank	VT708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
926	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253855	3/9/2023	Heniff Transportation	521B	Frac Tank	1553	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,076	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
927	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253799	3/9/2023	Kuhnle Brothers	521B	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
928	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253660	3/9/2023	Altom Transport	521B	Frac Tank	T21566	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
929	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253699	3/9/2023	Quality Carriers	AL4771	Frac Tank	MT6801	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
930	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253587	3/9/2023	Heniff Transportation	AL4710	Frac Tank	43829	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
931	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253662	3/9/2023	Altom Transport	AL4771	Frac Tank	T21622	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
932	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253665	3/9/2023	Vickery Transportation	AL4771	Frac Tank	R759	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
933	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253856	3/9/2023	Heniff Transportation	AL4754	Frac Tank	989	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
934	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252403	3/9/2023	Heniff Transportation	AL4710	Frac Tank	11937	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
935	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253857	3/9/2023	Heniff Transportation	AL4755	Frac Tank	21-1952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
936	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253858	3/9/2023	Heniff Transportation	AL4754	Frac Tank	21-3254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
937	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253773	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	731	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,201	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
938	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253859	3/9/2023	Heniff Transportation	AL4755	Frac Tank	21-1748	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
939	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126940	3/9/2023	Quality Carriers	AL4710	Frac Tank	702388	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
940	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253586	3/9/2023	Heniff Transportation	AL4710	Frac Tank	70214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
941	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253650	3/9/2023	Robbie D Wood	AL4755	Frac Tank	LT2287	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
942	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253889	3/9/2023	Heniff Transportation	AL4755	Frac Tank	CD08	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,033	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
943	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253890	3/9/2023	Heniff Transportation	AL4755/266384	Frac Tank	43245	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
944	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253806	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
945	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253808	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
946	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253801	3/9/2023	Kuhnle Brothers	266384	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
947	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253853	3/9/2023	Quality Carriers	266384	Frac Tank	702586	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
948	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253769	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
949	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253585	3/9/2023	Heniff Transportation	AL4710	Frac Tank	43802	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
950	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253891	3/9/2023	Heniff Transportation	513A	Frac Tank	21-2017	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
951	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253915	3/9/2023	Action Resources	AL4710	Frac Tank	672	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,963	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
952	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126939	3/9/2023	Quality Carriers	AL4710	Frac Tank	701865	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
953	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253807	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
954	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126938	3/9/2023	Quality Carriers	AL4710	Frac Tank	CH8119	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
955	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253918	3/9/2023	Action Resources	251782	Frac Tank	SIR0091	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
956	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253771	3/9/2023	Kuhnle Brothers	251782	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
957	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253803	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
958	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253893	3/9/2023	Heniff Transportation	251782	Frac Tank	21-1747	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,067	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
959	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253892	3/9/2023	Heniff Transportation	251688	Frac Tank	909	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
960	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253761	3/9/2023	Heniff Transportation	265276	Frac Tank	11-1032	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
961	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253785	3/9/2023	Kuhnle Brothers	265276	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
962	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253759	3/9/2023	Heniff Transportation	251683	Frac Tank	21-1755	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
963	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252493	3/9/2023	Altom Transport	251683	Frac Tank	T-21374	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
964	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253760	3/9/2023	Heniff Transportation	256094	Frac Tank	50044	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
965	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253758	3/9/2023	Heniff Transportation	251633	Frac Tank	11-644	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
966	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253698	3/9/2023	Quality Carriers	256094	Frac Tank	702261	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
967	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252367	3/9/2023	Quality Carriers	256094	Frac Tank	701580	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
968	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252355	3/9/2023	Quality Carriers	265276	Frac Tank	7241	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,109	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
969	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252356	3/9/2023	Quality Carriers	265276	Frac Tank	702390	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
970	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253786	3/9/2023	Kuhnle Brothers	256094	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
971	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253772	3/9/2023	Kuhnle Brothers	251633	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
972	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253916	3/9/2023	Action Resources	AL4710	Frac Tank	SIR0020	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
973	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253875	3/9/2023	Heniff Transportation	251321/ 251633	Frac Tank	8040	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,141	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
974	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126948	3/9/2023	Quality Carriers	251321	Frac Tank	SL7190	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,067	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
975	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253787	3/9/2023	Kuhnle Brothers	251321	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
976	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253788	3/9/2023	Kuhnle Brothers	251321	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
977	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253523	3/9/2023	Vickery Transportation	251478/ 251321	Frac Tank	6423	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
978	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253802	3/9/2023	Kuhnle Brothers	266384/ 513A	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
979	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253777	3/9/2023	Kuhnle Brothers	532A	Frac Tank	843	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
980	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252491	3/9/2023	Altom Transport	252007/ 253085	Frac Tank	T21623	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
981	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253756	3/9/2023	Heniff Transportation	252007	Frac Tank	17-7476	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,015	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
982	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253757	3/9/2023	Heniff Transportation	253085	Frac Tank	21-1716	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
983	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253920	3/9/2023	Kuhnle Brothers	253085	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
984	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253634	3/9/2023	SJ Transportation	253085/251478	Frac Tank	TV235	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
985	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126946	3/9/2023	Quality Carriers	251478	Frac Tank	702622	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
986	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253526	3/9/2023	Vickery Transportation	251478	Frac Tank	D790	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,123	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
987	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240725	3/9/2023	Quality Carriers	251683	Frac Tank	703034	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
988	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252492	3/9/2023	Altom Transport	AL4710	Frac Tank	T21501	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
989	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253657	3/9/2023	Altom Transport	574B	Frac Tank	T21475	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,134	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
990	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253661	3/9/2023	Altom Transport	574B	Frac Tank	T21473	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
991	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253655	3/9/2023	Altom Transport	574B/256043	Frac Tank	T21621	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
992	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253755	3/9/2023	Heniff Transportation	AL4710	Frac Tank	1845	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,126	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
993	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253876	3/9/2023	Heniff Transportation	574B	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,161	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
994	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253877	3/10/2023	Heniff Transportation	256043	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,153	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
995	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253928	3/10/2023	Kuhnle Brothers	256043	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
996	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253929	3/10/2023	Kuhnle Brothers	256043	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
997	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253969	3/10/2023	Kuhnle Brothers	256043	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
998	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253770	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1195	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
999	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253774	3/9/2023	Kuhnle Brothers	AL4710	Frac Tank	1008	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,900	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1000	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240972	3/9/2023	Robbie D Wood	AL4710	Frac Tank	LT2280	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1001	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253653	3/9/2023	Robbie D Wood	574B	Frac Tank	7996	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,173	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1002	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253514	3/9/2023	Vickery Transportation	574B	Frac Tank	LT-888	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1003	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253527	3/9/2023	Vickery Transportation	574B	Frac Tank	7730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,148	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1004	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253528	3/9/2023	Vickery Transportation	574B	Frac Tank	KL757	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1005	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253513	3/10/2023	Vickery Transportation	531A	Frac Tank	5849	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1006	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253925	3/10/2023	Kuhnle Brothers	5484	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1007	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253926	3/10/2023	Kuhnle Brothers	256043/531A	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1008	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253927	3/10/2023	Kuhnle Brothers	256043	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1009	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253878	3/10/2023	Heniff Transportation	531A	Frac Tank	1779	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,093	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1010	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253879	3/10/2023	Heniff Transportation	531A/AL4735	Frac Tank	2615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,047	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1011	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253880	3/10/2023	Heniff Transportation	AL4735	Frac Tank	11-557	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,194	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1012	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253881	3/10/2023	Heniff Transportation	AL4735	Frac Tank	3135	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1013	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253882	3/10/2023	Heniff Transportation	AL4735	Frac Tank	1981	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1014	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253883	3/10/2023	Heniff Transportation	5484	Frac Tank	41-3990	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,141	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1015	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253711	3/10/2023	Quality Carriers	AL5484	Frac Tank	CH7444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,180	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1016	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253794	3/10/2023	Kuhnle Brothers	AL5484	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1017	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253860	3/10/2023	Heniff Transportation	AL5484	Frac Tank	11-1225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1018	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253861	3/10/2023	Heniff Transportation	AL4710	Frac Tank	3RG23195	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,033	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1019	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253700	3/10/2023	Quality Carriers	AL4710	Frac Tank	MT7018	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1020	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253862	3/10/2023	Heniff Transportation	AL4710	Frac Tank	4891	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1021	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253863	3/10/2023	Heniff Transportation	AL4710	Frac Tank	11-274	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,730	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1022	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253693	3/10/2023	Quality Carriers	257761	Frac Tank	W75208	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,045	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1023	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253690	3/10/2023	Quality Carriers	257761	Frac Tank	701486	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,035	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1024	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253960	3/10/2023	Kuhnle Brothers	251688/257761	Frac Tank	909	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1025	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253656	3/10/2023	Altom Transport	AL4787	Frac Tank	T21561	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1026	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253917	3/10/2023	Action Resources	AL4787	Frac Tank	702	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1027	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253971	3/10/2023	SJ Transportation	257761/251871	Frac Tank	TV-217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1028	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253864	3/10/2023	Heniff Transportation	AL4787	Frac Tank	DH-18	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1029	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253961	3/10/2023	Kuhnle Brothers	251688	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1030	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253959	3/10/2023	Kuhnle Brothers	257761	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1031	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383077	3/10/2023	Quality Carriers	251362	Frac Tank	702444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1032	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253962	3/10/2023	Kuhnle Brothers	251362	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1033	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253710	3/10/2023	Quality Carriers	251362	Frac Tank	3827	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1034	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383062	3/10/2023	Quality Carriers	251362/AL5484	Frac Tank	701542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1035	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253874	3/10/2023	Heniff Transportation	AL5484	Frac Tank	11-1276	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1036	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253709	3/10/2023	Quality Carriers	AL5484	Frac Tank	703485	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1037	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383015	3/10/2023	Action Resources	257204	Frac Tank	SIR0043	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1038	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253884	3/10/2023	Heniff Transportation	257204	Frac Tank	43847	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1039	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126937	3/10/2023	Quality Carriers	251060	Frac Tank	703048	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1040	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011481	3/10/2023	Quality Carriers	251060	Frac Tank	CH7179	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1041	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253675	3/10/2023	Vickery Transportation	252651	Frac Tank	LT1621	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,018	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1042	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253895	3/10/2023	Heniff Transportation	252651	Frac Tank	21-1875	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,061	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1043	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253692	3/10/2023	Quality Carriers	251871	Frac Tank	67126	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,113	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1044	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253888	3/10/2023	Heniff Transportation	251060	Frac Tank	111084	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1045	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240528	3/10/2023	Heniff Transportation	251871	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1046	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253958	3/10/2023	Kuhnle Brothers	252651	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1047	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253894	3/10/2023	Heniff Transportation	251871/252651	Frac Tank	41-3956	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1048	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253887	3/10/2023	Heniff Transportation	574D	Frac Tank	11-678	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,400	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1049	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253922	3/10/2023	Kuhnle Brothers	574D	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1050	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253676	3/10/2023	Vickery Transportation	251026	Frac Tank	7613	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1051	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253896	3/10/2023	Heniff Transportation	251026	Frac Tank	00598	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1052	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253725	3/10/2023	Heniff Transportation	507F/574D	Frac Tank	11-1128	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,999	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1053	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253986	3/10/2023	Altom Transport	507F	Frac Tank	T21614	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1054	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011484	3/10/2023	Quality Carriers	507F	Frac Tank	702609	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,118	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1055	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240529	3/10/2023	Heniff Transportation	251688	Frac Tank	1983	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1056	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253666	3/10/2023	Vickery Transportation	AL5484	Frac Tank	BV704	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1057	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253973	3/10/2023	SJ Transportation	AL5484	Frac Tank	TV-214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1058	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253873	3/10/2023	Heniff Transportation	AL5484	Frac Tank	11-454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1059	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253851	3/10/2023	Quality Carriers	AL4755	Frac Tank	8211	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1060	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253957	3/10/2023	Kuhnle Brothers	251026/AL4755	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1061	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253852	3/10/2023	Quality Carriers	251026	Frac Tank	702424	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1062	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253897	3/10/2023	Heniff Transportation	AL4755	Frac Tank	21-1965	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,177	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1063	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253963	3/10/2023	Kuhnle Brothers	AL5484/AL4710	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1064	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253701	3/10/2023	Quality Carriers	AL4710	Frac Tank	5563	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,015	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1065	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	020011483	3/10/2023	Quality Carriers	251060	Frac Tank	701516	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1066	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253885	3/10/2023	Heniff Transportation	251060/5740	Frac Tank	21-3721	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1067	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253886	3/10/2023	Heniff Transportation	5740	Frac Tank	11-925	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,030	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1068	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253016	3/10/2023	Action Resources	566B	Frac Tank	SIR0008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1069	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253989	3/10/2023	Altom Transport	257204	Frac Tank	T21536	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1070	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383135	3/10/2023	Heniff Transportation	572A/507F	Frac Tank	43771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1071	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383119	3/10/2023	Heniff Transportation	572A/507F	Frac Tank	1590	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,243	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1072	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383120	3/10/2023	Heniff Transportation	5930	Frac Tank	61659	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,900	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1073	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383121	3/10/2023	Heniff Transportation	566B	Frac Tank	8020	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,032	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1074	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383122	3/10/2023	Heniff Transportation	566B	Frac Tank	HEC05	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,127	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1075	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383123	3/10/2023	Heniff Transportation	566B	Frac Tank	CC70159	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,122	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1076	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253724	3/10/2023	Heniff Transportation	507F	Frac Tank	21-1929	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,177	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1077	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383183	3/10/2023	Kuhnle Brothers	566B/5930	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1078	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383923	3/10/2023	Kuhnle Brothers	5930	Frac Tank	909	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1079	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383924	3/10/2023	Kuhnle Brothers	593D	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,077	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1080	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383061	3/10/2023	Quality Carriers	572A	Frac Tank	702737	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1081	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	016126947	3/10/2023	Quality Carriers	257204	Frac Tank	702432	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1082	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253518	3/10/2023	Vickery Transportation	572A	Frac Tank	306L	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1083	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383898	3/10/2023	Heniff Transportation	256094	Frac Tank	8023	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,140	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1084	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383900	3/10/2023	Heniff Transportation	256094	Frac Tank	4587	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,110	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1085	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252498	3/10/2023	Action Resources	256094	Frac Tank	SIR0037	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1086	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253901	3/10/2023	Heniff Transportation	256094	Frac Tank	DM51	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1087	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253902	3/10/2023	Heniff Transportation	265276	Frac Tank	43821	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,062	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1088	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253954	3/10/2023	Kuhnle Brothers	265276	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1089	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253953	3/10/2023	Kuhnle Brothers	265276/251091	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1090	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253903	3/11/2023	Heniff Transportation	AL5484	Frac Tank	1548	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,062	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1091	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253904	3/11/2023	Heniff Transportation	AL5484	Frac Tank	1582	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1092	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253931	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1093	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253932	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1094	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253905	3/11/2023	Heniff Transportation	AL5484	Frac Tank	1952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,122	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1095	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253702	3/11/2023	Quality Carriers	501F	Frac Tank	702225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1096	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383196	3/11/2023	Kuhnle Brothers	257400/501F	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1097	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253866	3/11/2023	Heniff Transportation	257400	Frac Tank	5804	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1098	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253966	3/11/2023	Kuhnle Brothers	257400	Frac Tank	1215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1099	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253999	3/11/2023	Altom Transport	251091	Frac Tank	T21518	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,137	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1100	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253865	3/11/2023	Heniff Transportation	251079	Frac Tank	41-1997	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,275	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1101	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253952	3/11/2023	Kuhnle Brothers	251091	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1102	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253930	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	497	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1103	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253948	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1104	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253949	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1105	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253951	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1106	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253950	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1107	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383157	3/11/2023	Heniff Transportation	251543	Frac Tank	21-1920	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1108	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383136	3/11/2023	Heniff Transportation	257516/ 251543	Frac Tank	41-3019	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,330	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1109	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383178	3/11/2023	Kuhnle Brothers	257516	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1110	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383101	3/11/2023	Heniff Transportation	257516	Frac Tank	21-1884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1111	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253848	3/11/2023	Quality Carriers	AL5484	Frac Tank	65696	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1112	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253909	3/11/2023	Heniff Transportation	AL5484	Frac Tank	43796	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,002	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1113	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253908	3/11/2023	Heniff Transportation	AL5484	Frac Tank	11-7708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,961	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1114	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253936	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,084	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1115	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253768	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1116	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253849	3/11/2023	Quality Carriers	AL5484	Frac Tank	703454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1117	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253907	3/11/2023	Heniff Transportation	AL5484	Frac Tank	11-943	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1118	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253906	3/11/2023	Heniff Transportation	AL4710/ AL5484	Frac Tank	21-1931	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1119	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253996	3/11/2023	Altom Transport	AL4710	Frac Tank	T21584	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1120	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253850	3/11/2023	Quality Carriers	AL4710	Frac Tank	702315	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,021	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1121	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253935	3/11/2023	Kuhnle Brothers	AL4710	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,263	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1122	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253934	3/11/2023	Kuhnle Brothers	AL4710	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1123	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253682	3/11/2023	Vickery Transportation	AL4710	Frac Tank	63745	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1124	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383216	3/11/2023	Altom Transport	251650	Frac Tank	T21377	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1125	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383060	3/11/2023	Quality Carriers	251650	Frac Tank	703101	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1126	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253517	3/11/2023	Vickery Transportation	251650/ 511A	Frac Tank	3069	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1127	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253515	3/11/2023	Vickery Transportation	511A	Frac Tank	KL751	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1128	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	0252383087	3/11/2023	Heniff Transportation	511A	Frac Tank	1901	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,956	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1129	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	0252383088	3/11/2023	Heniff Transportation	511A	Frac Tank	11-1271	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1130	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383165	3/11/2023	Kuhnle Brothers	253085	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1131	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383054	3/11/2023	Quality Carriers	253085	Frac Tank	70579	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1132	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383089	3/11/2023	Heniff Transportation	253085	Frac Tank	1626	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1133	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253677	3/11/2023	Vickery Transportation	252007/253085	Frac Tank	7444	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1134	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383090	3/11/2023	Heniff Transportation	252007	Frac Tank	CC7074	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1135	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383091	3/11/2023	Heniff Transportation	501F	Frac Tank	LT1252	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1136	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383167	3/11/2023	Kuhnle Brothers	501F	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1137	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253678	3/11/2023	Vickery Transportation	501F	Frac Tank	KL752	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1138	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383084	3/11/2023	Heniff Transportation	AL5645	Frac Tank	5338	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1139	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383085	3/11/2023	Heniff Transportation	AL5645	Frac Tank	01137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1140	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383164	3/11/2023	Kuhnle Brothers	AL5645	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1141	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383059	3/11/2023	Quality Carriers	AL5645/251650	Frac Tank	702117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1142	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383086	3/11/2023	Heniff Transportation	251650	Frac Tank	CC70145	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1143	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253912	3/11/2023	Heniff Transportation	AL5484	Frac Tank	49-0477	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1144	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253911	3/11/2023	Heniff Transportation	AL5484	Frac Tank	43231	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1145	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253910	3/11/2023	Heniff Transportation	AL5484	Frac Tank	21-1765	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1146	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383011	3/11/2023	Action Resources	AL5484	Frac Tank	SIR0004	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1147	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383056	3/11/2023	Quality Carriers	532A	Frac Tank	703446	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1148	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383184	3/11/2023	Kuhnle Brothers	532A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1149	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383055	3/11/2023	Quality Carriers	532A	Frac Tank	702588	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1150	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383083	3/11/2023	Heniff Transportation	532A	Frac Tank	1299	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,126	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1151	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383139	3/11/2023	Heniff Transportation	257225	Frac Tank	00066	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1152	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383138	3/11/2023	Heniff Transportation	251002/257225	Frac Tank	11-1090	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1153	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383052	3/11/2023	Quality Carriers	251002	Frac Tank	702809	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1154	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253998	3/11/2023	Altom Transport	215002	Frac Tank	T21484	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,941	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1155	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	0252383137	3/11/2023	Heniff Transportation	251543/251002	Frac Tank	4892	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1156	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383053	3/11/2023	Quality Carriers	251543	Frac Tank	702003	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1157	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253964	3/11/2023	Kuhnle Brothers	251079	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,048	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1158	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253933	3/11/2023	Kuhnle Brothers	AL5458	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,135	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1159	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253965	3/11/2023	Kuhnle Brothers	251091	Frac Tank	909	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,110	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1160	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383195	3/11/2023	Kuhnle Brothers	251091	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,077	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1161	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253913	3/11/2023	Heniff Transportation	AL5484	Frac Tank	1434	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,194	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1162	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253939	3/11/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1163	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253938	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1164	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025243913	3/11/2023	Heniff Transportation	AL5484	Frac Tank	1434	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,194	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1165	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253937	3/11/2023	Kuhnle Brothers	AL5484	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1166	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253847	3/11/2023	Quality Carriers	AL5484 / AL4710	Frac Tank	702458	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,144	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1167	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253681	3/11/2023	Vickery Transportation	AL4710	Frac Tank	7071	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1168	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253940	3/12/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1169	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253804	3/12/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1170	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253914	3/12/2023	Heniff Transportation	AL4710	Frac Tank	11-1194	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1171	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253941	3/12/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1172	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383309	3/12/2023	Heniff Transportation	531A	Frac Tank	8041	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1173	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383312	3/12/2023	Heniff Transportation	AL4754 / 521B	Frac Tank	43232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1174	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383057	3/12/2023	Heniff Transportation	521B	Frac Tank	701682	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1175	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253679	3/12/2023	Vickery Transportation	531A	Frac Tank	702511	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1176	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383311	3/12/2023	Heniff Transportation	521B	Frac Tank	00071	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1177	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383310	3/12/2023	Heniff Transportation	521B	Frac Tank	41-3792	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1178	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383156	3/12/2023	Heniff Transportation	256160	Frac Tank	21-1881	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1179	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253945	3/12/2023	Kuhnle Brothers	AL513B	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1180	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383332	3/12/2023	Kuhnle Brothers	540A	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1181	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383326	3/12/2023	Heniff Transportation	540A	Frac Tank	41-3474	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1182	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253619	3/12/2023	Heniff Transportation	AL513B / 531A	Frac Tank	43791	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,031	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1183	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383327	3/12/2023	Heniff Transportation	540A	Frac Tank	3RG23157	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1184	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253617	3/12/2023	Heniff Transportation	AL4710	Frac Tank	11-401	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,662	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1185	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383050	3/12/2023	Quality Carriers	251076	Frac Tank	4615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1186	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253616	3/12/2023	Heniff Transportation	AL4710	Frac Tank	5256	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1187	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253947	3/12/2023	Kuhnle Brothers	AL4710-AL513B	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1188	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253767	3/12/2023	Kuhnle Brothers	AL4710	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1189	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253615	3/12/2023	Heniff Transportation	AI5484 / AL4710	Frac Tank	LT1635	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1190	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383325	3/12/2023	Heniff Transportation	251076	Frac Tank	21-1887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1191	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253943	3/12/2023	Kuhnle Brothers	AL5484	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1192	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253942	3/12/2023	Kuhnle Brothers	AL5484	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1193	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253614	3/12/2023	Heniff Transportation	AL5484 / AL4710	Frac Tank	T-286	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1194	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383163	3/12/2023	Kuhnle Brothers	AL4471 / AL4755	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1195	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383331	3/12/2023	Heniff Transportation	257410	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1196	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383185	3/12/2023	Kuhnle Brothers	AL4755	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1197	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383049	3/12/2023	Quality Carriers	251076	Frac Tank	702753	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1198	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253995	3/12/2023	Altom Transport	257195	Frac Tank	T-21272	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1199	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383328	3/12/2023	Heniff Transportation	257195	Frac Tank	11-884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1200	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383051	3/12/2023	Quality Carriers	257410	Frac Tank	CH7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1201	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383329	3/12/2023	Heniff Transportation	257410	Frac Tank	1969	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,032	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1202	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253680	3/12/2023	Vickery Transportation	AL4755	Frac Tank	T-723	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,839	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1203	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383341	3/12/2023	Kuhnle Brothers	538F/257410	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1204	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253618	3/12/2023	Heniff Transportation	AL513B	Frac Tank	43698	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1205	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253765	3/12/2023	Kuhnle Brothers	AL4754	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,000	4,572	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1206	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383340	3/12/2023	Kuhnle Brothers	1213	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1207	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383313	3/12/2023	Heniff Transportation	AL4754	Frac Tank	358	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1208	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	024583324	3/12/2023	Heniff Transportation	538F	Frac Tank	11-1282	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1209	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253766	3/12/2023	Kuhnle Brothers	AL4754	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1210	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383058	3/12/2023	Quality Carriers	AL4755 / AL4754	Frac Tank	702720	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,118	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1211	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383330	3/12/2023	Heniff Transportation	538F	Frac Tank	3RG23150	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1212	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253846	3/12/2023	Quality Carriers	AL4735	Frac Tank	700606	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1213	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383306	3/12/2023	Heniff Transportation	AL5484	Frac Tank	11-652	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1214	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383305	3/12/2023	Heniff Transportation	AL5484	Frac Tank	11764	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1215	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383308	3/12/2023	Heniff Transportation	531A/AL4735	Frac Tank	7017	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,195	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1216	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383307	3/12/2023	Heniff Transportation	AL4735	Frac Tank	21-3937	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1217	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383355	3/12/2023	Kuhnle Brothers	AL5484/AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1218	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253946	3/12/2023	Kuhnle Brothers	AL4735	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1219	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383360	3/12/2023	Kuhnle Brothers	AL4735	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1220	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383357	3/12/2023	Kuhnle Brothers	AL5484	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1221	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025253764	3/12/2023	Kuhnle Brothers	AL5484	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	Received	5,040	4,863	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1222	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383304	3/13/2023	Heniff Transportation	AL4710	Frac Tank	41-3481	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,122	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1223	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383358	3/13/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1224	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383323	3/13/2023	Heniff Transportation	AL4710	Frac Tank	11-776	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1225	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383342	3/13/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1226	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383359	3/13/2023	Kuhnle Brothers	AL4710	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1227	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383160	3/13/2023	Kuhnle Brothers	AL4710	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1228	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253845	3/13/2023	Quality Carriers	AL4710	Frac Tank	701968	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1229	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383161	3/13/2023	Kuhnle Brothers	AL4738	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1230	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383301	3/13/2023	Heniff Transportation	AL4771	Frac Tank	11-1053	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1231	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383162	3/13/2023	Kuhnle Brothers	AL4771	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1232	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383302	3/13/2023	Heniff Transportation	AL4738	Frac Tank	21-3414	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,083	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1233	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383303	3/13/2023	Heniff Transportation	AL4738	Frac Tank	11-945	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1234	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383190	3/13/2023	Kuhnle Brothers	252651	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1235	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383316	3/13/2023	Heniff Transportation	252651	Frac Tank	11-653	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1236	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383315	3/13/2023	Heniff Transportation	AL4738/251026	Frac Tank	4990	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1237	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253844	3/13/2023	Quality Carriers	251026	Frac Tank	703159	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1238	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383189	3/13/2023	Kuhnle Brothers	251026	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1239	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383378	3/13/2023	Kuhnle Brothers	251871	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1240	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025240599	2/22/2023	Heniff Transportation	513A	Frac Tank	11655	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,094	4,271	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1241	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383379	3/13/2023	Kuhnle Brothers	251871	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1242	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383192	3/13/2023	Kuhnle Brothers	252651	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1243	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383191	3/13/2023	Kuhnle Brothers	251871	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1244	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383380	3/13/2023	Kuhnle Brothers	256160	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1245	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383169	3/13/2023	Kuhnle Brothers	256160	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,071	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1246	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383381	3/13/2023	Kuhnle Brothers	256160	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1247	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383168	3/13/2023	Kuhnle Brothers	256160	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1248	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253723	3/13/2023	Heniff Transportation	252651	Frac Tank	3343	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1249	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383382	3/13/2023	Kuhnle Brothers	257761	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1250	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383170	3/13/2023	Kuhnle Brothers	256160	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1251	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383038	3/13/2023	Quality Carriers	AL4710/251362	Frac Tank	70971	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1252	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383186	3/13/2023	Kuhnle Brothers	AL4710	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1253	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383187	3/13/2023	Kuhnle Brothers	251362	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1254	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383081	3/13/2023	Heniff Transportation	AL5484	Frac Tank	CC7091	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1255	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383082	3/13/2023	Heniff Transportation	251362	Frac Tank	Missing Number	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,005	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1256	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383314	3/13/2023	Heniff Transportation	251362	Frac Tank	43214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,116	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1257	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383188	3/13/2023	Kuhnle Brothers	251362	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1258	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383041	3/13/2023	Quality Carriers	AL5484	Frac Tank	11341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1259	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383039	3/13/2023	Quality Carriers	251362	Frac Tank	702130	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1260	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383040	3/13/2023	Quality Carriers	251362	Frac Tank	702371	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1261	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383317	3/13/2023	Heniff Transportation	251688	Frac Tank	21-0203	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1262	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383194	3/13/2023	Kuhnle Brothers	251362/AL5484	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1263	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383377	3/13/2023	Kuhnle Brothers	257761/251688	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1264	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383118	3/13/2023	Heniff Transportation	AL4944	Frac Tank	21-2014	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,177	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1265	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253842	3/14/2023	Quality Carriers	AL4944/AL5679	Frac Tank	703493	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1266	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253843	3/14/2023	Quality Carriers	AL4944	Frac Tank	702222	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1267	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383117	3/14/2023	Heniff Transportation	AL4944	Frac Tank	43245	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,099	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1268	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383036	3/13/2023	Quality Carriers	AL4944	Frac Tank	702032	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1269	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383043	3/14/2023	Quality Carriers	257204	Frac Tank	702622	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1270	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383044	3/14/2023	Quality Carriers	257204	Frac Tank	701580	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1271	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383080	3/14/2023	Heniff Transportation	251060	Frac Tank	41-3204	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,099	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1272	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383079	3/14/2023	Heniff Transportation	257204	Frac Tank	CC 7030	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,045	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1273	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383421	3/14/2023	Kuhnle Brothers	251060	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1274	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383124	3/14/2023	Heniff Transportation	251060/574D	Frac Tank	21-1828	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,031	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1275	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383376	3/14/2023	Kuhnle Brothers	574D	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1276	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383125	3/14/2023	Heniff Transportation	574D/507F	Frac Tank	987	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1277	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383126	3/14/2023	Heniff Transportation	507F/572A	Frac Tank	21-773	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,046	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1278	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383048	3/14/2023	Quality Carriers	507F	Frac Tank	702812	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1279	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383374	3/14/2023	Kuhnle Brothers	507F	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1280	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383318	3/14/2023	Heniff Transportation	AL 4787	Frac Tank	21-3693	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1281	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383197	3/14/2023	Kuhnle Brothers	AL 4787	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1282	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383319	3/14/2023	Heniff Transportation	AL 4787	Frac Tank	43847	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1283	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383320	3/14/2023	Heniff Transportation	AL 4787	Frac Tank	1789	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1284	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383385	3/14/2023	Kuhnle Brothers	AL 4216	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,401	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1285	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383034	3/14/2023	Quality Carriers	AL 4216	Frac Tank	67188	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,441	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1286	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383384	3/14/2023	Kuhnle Brothers	AL 4216	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1287	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383035	3/14/2023	Quality Carriers	AL4216/AL5674	Frac Tank	LA7045	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1288	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383322	3/14/2023	Heniff Transportation	AL 5679	Frac Tank	3344	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1289	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383193	3/14/2023	Kuhnle Brothers	AL 5679	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1290	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383349	3/14/2023	Kuhnle Brothers	AL 5679	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1291	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383046	3/14/2023	Quality Carriers	572A	Frac Tank	703034	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1292	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383351	3/14/2023	Kuhnle Brothers	516F	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1293	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383375	3/14/2023	Kuhnle Brothers	516F	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1294	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383141	3/14/2023	Heniff Transportation	516F	Frac Tank	41-3825	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,024	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1295	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383153	3/14/2023	Heniff Transportation	516F	Frac Tank	43237	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1296	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383350	3/14/2023	Kuhnle Brothers	514E	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1297	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383155	3/14/2023	Heniff Transportation	514E	Frac Tank	1711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1298	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383154	3/14/2023	Heniff Transportation	514E	Frac Tank	43782	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1299	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253621	3/14/2023	Heniff Transportation	AL4710	Frac Tank	LT-1238	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,632	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1300	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253620	3/14/2023	Heniff Transportation	AL4710	Frac Tank	1884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1301	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383321	3/14/2023	Heniff Transportation	AL4710	Frac Tank	11-316	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1302	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383372	3/14/2023	Kuhnle Brothers	572A	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1303	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383373	3/14/2023	Kuhnle Brothers	572A/593D	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1304	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383030	3/15/2023	Quality Carriers	560B	Frac Tank	18173	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1305	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253727	3/15/2023	Heniff Transportation	257393/560B	Frac Tank	5251	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1306	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383031	3/14/2023	Quality Carriers	257393	Frac Tank	701568	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,162	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1307	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383032	3/14/2023	Quality Carriers	257393/AL5484	Frac Tank	CH8896	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,024	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1308	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253728	3/14/2023	Heniff Transportation	AL5484	Frac Tank	43819	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,062	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1309	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253729	3/14/2023	Heniff Transportation	AL5484	Frac Tank	1117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,036	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1310	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253734	3/15/2023	Heniff Transportation	560B	Frac Tank	1607	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1311	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253736	3/15/2023	Heniff Transportation	560B	Frac Tank	70251R	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1312	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253735	3/15/2023	Heniff Transportation	560B	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,161	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1313	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383029	3/15/2023	Quality Carriers	257761	Frac Tank	703498	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1314	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253739	3/15/2023	Heniff Transportation	593D	Frac Tank	2995	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1315	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253737	3/15/2023	Heniff Transportation	257761	Frac Tank	4887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1316	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253738	3/15/2023	Heniff Transportation	572A	Frac Tank	21-1973	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,030	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1317	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253740	3/15/2023	Heniff Transportation	593D/566B	Frac Tank	4978	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1318	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383045	3/15/2023	Quality Carriers	257761/251871	Frac Tank	703498	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1319	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383419	3/15/2023	Kuhnle Brothers	251871	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1320	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383371	3/15/2023	Kuhnle Brothers	255950	Frac Tank	1221	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1321	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383131	3/15/2023	Heniff Transportation	251782 / 251871	Frac Tank	1880	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1322	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383199	3/15/2023	Kuhnle Brothers	251320	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1323	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383200	3/15/2023	Kuhnle Brothers	251320	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1324	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383420	3/15/2023	Kuhnle Brothers	251782	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1325	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383201	3/15/2023	Kuhnle Brothers	251320	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1326	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383130	3/15/2023	Heniff Transportation	251 / 782	Frac Tank	11-160	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,330	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1327	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383366	3/15/2023	Kuhnle Brothers	251320/256729	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1328	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383129	3/15/2023	Heniff Transportation	251688 / 251782	Frac Tank	11-1005	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1329	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383370	3/15/2023	Kuhnle Brothers	256729	Frac Tank	870	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,084	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1330	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383128	3/15/2023	Heniff Transportation	251688	Frac Tank	3143	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1331	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383364	3/15/2023	Kuhnle Brothers	256729	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1332	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383127	3/15/2023	Heniff Transportation	257761 / 251688	Frac Tank	43866	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1333	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383423	3/15/2023	Heritage Transport	266240	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1334	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383365	3/15/2023	Kuhnle Brothers	256729	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1335	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383352	3/15/2023	Kuhnle Brothers	255950	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1336	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383369	3/15/2023	Kuhnle Brothers	256729/ 251014	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1337	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383368	3/15/2023	Kuhnle Brothers	251014	Frac Tank	767	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1338	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383354	3/15/2023	Kuhnle Brothers	255950	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1339	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383202	3/15/2023	Kuhnle Brothers	251014	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1340	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383142	3/15/2023	Heniff Transportation	251014	Frac Tank	21-1755	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,033	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1341	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383367	3/15/2023	Kuhnle Brothers	257019	Frac Tank	771	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1342	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253742	3/15/2023	Heniff Transportation	56613	Frac Tank	1582	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,089	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1343	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253741	3/15/2023	Heniff Transportation	566B	Frac Tank	11-609	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1344	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383104	3/16/2023	Heniff Transportation	511A	Frac Tank	21-1720	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1345	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383102	3/16/2023	Heniff Transportation	251650	Frac Tank	5246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1346	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383103	3/16/2023	Heniff Transportation	511A	Frac Tank	41-3992	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1347	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025252409	3/16/2023	Heniff Transportation	251650	Frac Tank	5248	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1348	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253752	3/16/2023	Heniff Transportation	251650	Frac Tank	11-454	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1349	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253744	3/16/2023	Heniff Transportation	251871/ 252651	Frac Tank	4887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1350	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253745	3/16/2023	Heniff Transportation	AL5645	Frac Tank	1983	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1351	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253753	3/16/2023	Heniff Transportation	AL5646/ 251650	Frac Tank	15-33	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1352	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383386	3/16/2023	Kuhnle Brothers	AL5645	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1353	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253743	3/16/2023	Heniff Transportation	566B/AL 5645	Frac Tank	43866	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,042	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1354	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383387	3/16/2023	Heniff Transportation	251478	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1355	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383457	3/16/2023	Kuhnle Brothers	251321	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1356	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383389	3/16/2023	Kuhnle Brothers	251478	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1357	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383388	3/16/2023	Kuhnle Brothers	251479	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1358	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383105	3/16/2023	Heniff Transportation	251321	Frac Tank	11-1225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1359	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383416	3/16/2023	Kuhnle Brothers	AL5679	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1360	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240530	3/16/2023	Heniff Transportation	AL5679	Frac Tank	21-3254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,097	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1361	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383133	3/16/2023	Heniff Transportation	AL5679	Frac Tank	2615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,047	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1362	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383417	3/16/2023	Kuhnle Brothers	AL4944 / AL5679	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1363	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383418	3/16/2023	Kuhnle Brothers	AL4944	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1364	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383134	3/16/2023	Heniff Transportation	AL4944	Frac Tank	21-3707	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1365	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383132	3/16/2023	Heniff Transportation	AL4944	Frac Tank	41-2663	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1366	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383390	3/16/2023	Kuhnle Brothers	25B21-251683	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1367	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383339	3/16/2023	Kuhnle Brothers	257019	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1368	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383338	3/16/2023	Kuhnle Brothers	257019	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1369	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383337	3/16/2023	Kuhnle Brothers	257019	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1370	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383333	3/16/2023	Kuhnle Brothers	266240	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1371	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383334	3/16/2023	Kuhnle Brothers	266240	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1372	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383432	3/16/2023	Heritage Transport	266240-257728-538B-	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1373	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383203	3/16/2023	Kuhnle Brothers	555D	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1374	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383363	3/16/2023	Kuhnle Brothers	555D	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1375	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383205	3/16/2023	Kuhnle Brothers	555D	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1376	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383362	3/16/2023	Kuhnle Brothers	555D-260119	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1377	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383431	3/16/2023	Heritage Transport	260119	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1378	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383459	3/16/2023	Kuhnle Brothers	260119	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,084	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1379	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383458	3/16/2023	Kuhnle Brothers	260119	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1380	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383430	3/16/2023	Heritage Transport	260119-555D-251014-	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1381	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383415	3/16/2023	Kuhnle Brothers	AL5679/560B	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1382	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383460	3/16/2023	Kuhnle Brothers	251683	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1383	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253622	3/17/2023	Heniff Transportation	256094	Frac Tank	CC7076	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,044	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1384	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383110	3/16/2023	Heniff Transportation	526054	Frac Tank	41-1999	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1385	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383109	3/16/2023	Heniff Transportation	251633 / 256094	Frac Tank	L7 791	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,090	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1386	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383108	3/16/2023	Heniff Transportation	251633	Frac Tank	4892	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1387	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383107	3/16/2023	Heniff Transportation	251683	Frac Tank	21-1747	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,003	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1388	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383106	3/16/2023	Heniff Transportation	251683	Frac Tank	11-879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1389	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383424	3/17/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1390	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383111	3/17/2023	Heniff Transportation	251079	Frac Tank	111014	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1391	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383429	3/17/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1392	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383116	3/17/2023	Heniff Transportation	265276	Frac Tank	11-1042	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1393	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383353	3/17/2023	Kuhnle Brothers	265276	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1394	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383152	3/17/2023	Heniff Transportation	265276/1251091	Frac Tank	11-943	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1395	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383114	3/17/2023	Heniff Transportation	251091	Frac Tank	43231	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1396	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383115	3/17/2023	Heniff Transportation	251091/251079	Frac Tank	43886	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1397	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383112	3/17/2023	Heniff Transportation	251079	Frac Tank	8023	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,140	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1398	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253746	3/17/2023	Heniff Transportation	257400	Frac Tank	4891	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1399	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383428	3/17/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1400	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383151	3/17/2023	Heniff Transportation	257400	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1401	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383113	3/17/2023	Heniff Transportation	251079/257400	Frac Tank	111084	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,024	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1402	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253747	3/17/2023	Heniff Transportation	501F	Frac Tank	11-7708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,128	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1403	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383150	3/17/2023	Heniff Transportation	501F	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1404	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383181	3/17/2023	Kuhnle Brothers	252651	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1405	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383455	3/17/2023	Kuhnle Brothers	251871	Frac Tank	1213	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1406	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383093	3/17/2023	Heniff Transportation	251688	Frac Tank	3RG23150	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1407	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383092	3/17/2023	Heniff Transportation	251688	Frac Tank	70214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1408	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253869	3/17/2023	Heniff Transportation	252651/251688	Frac Tank	11-1199	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1409	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383180	3/17/2023	Kuhnle Brothers	251688	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1410	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383206	3/17/2023	Kuhnle Brothers	251781	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1411	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253867	3/17/2023	Heniff Transportation	251871	Frac Tank	21-3721	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1412	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253868	3/17/2023	Heniff Transportation	251871/251688	Frac Tank	61659	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1413	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383449	3/17/2023	Kuhnle Brothers	5484/574B	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,200	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1414	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383410	3/17/2023	Kuhnle Brothers	AL5484	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1415	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383409	3/17/2023	Kuhnle Brothers	AL5484	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1416	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383408	3/17/2023	Kuhnle Brothers	AL4710/AL5484	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1417	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383407	3/17/2023	Kuhnle Brothers	AL4710	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1418	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383406	3/17/2023	Kuhnle Brothers	AL4710	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1419	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240544	3/17/2023	Heniff Transportation	AL4710	Frac Tank	21-1875	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,152	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1420	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383405	3/17/2023	Kuhnle Brothers	560B	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1421	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383413	3/17/2023	Kuhnle Brothers	560B	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1422	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383414	3/17/2023	Kuhnle Brothers	560B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1423	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383149	3/17/2023	Heniff Transportation	501F	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1424	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383427	3/17/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1425	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383391	3/17/2023	Kuhnle Brothers	252007	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1426	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383143	3/17/2023	Heniff Transportation	252007	Frac Tank	11-1276	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1427	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383144	3/17/2023	Heniff Transportation	252007	Frac Tank	01137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,182	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1428	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383145	3/18/2023	Heniff Transportation	251060	Frac Tank	41-3956	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1429	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383146	3/18/2023	Heniff Transportation	574D	Frac Tank	11-574	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,105	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1430	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253751	3/18/2023	Heniff Transportation	266384	Frac Tank	11-678	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1431	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383148	3/18/2023	Heniff Transportation	507F	Frac Tank	11-1053	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1432	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253748	3/18/2023	Heniff Transportation	507F-572A	Frac Tank	7060	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,102	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1433	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253750	3/18/2023	Heniff Transportation	572A	Frac Tank	LT-1699	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,018	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1434	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240534	3/18/2023	Heniff Transportation	566B	Frac Tank	21-1881	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1435	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240533	3/18/2023	Heniff Transportation	593D-566B	Frac Tank	21-1884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1436	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240532	3/18/2023	Heniff Transportation	593D	Frac Tank	1425	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,079	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1437	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240543	3/18/2023	Heniff Transportation	593D-572A	Frac Tank	41-3474	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,144	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1438	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383397	3/18/2023	Kuhnle Brothers	593D	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1439	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383499	3/18/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1440	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383400	3/18/2023	Kuhnle Brothers	572A	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1441	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383398	3/18/2023	Kuhnle Brothers	572A	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1442	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383395	3/18/2023	Kuhnle Brothers	507F	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1443	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383500	3/18/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1444	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383394	3/18/2023	Kuhnle Brothers	574D	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1445	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383396	3/18/2023	Kuhnle Brothers	574D-507F	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1446	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383392	3/18/2023	Kuhnle Brothers	251060	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1447	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383393	3/18/2023	Kuhnle Brothers	251060-574D	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1448	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383425	3/18/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1449	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383495	3/18/2023	US Ecology Transportation	252651	Frac Tank	3080	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1450	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383172	3/18/2023	Kuhnle Brothers	AL4771	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1451	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383174	3/18/2023	Kuhnle Brothers	532A	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1452	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240535	3/18/2023	Heniff Transportation	532A	Frac Tank	LT-1797	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,093	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1453	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240531	3/18/2023	Heniff Transportation	532A	Frac Tank	1434	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,120	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1454	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383099	3/18/2023	Heniff Transportation	AL4771	Frac Tank	3Rg23187	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1455	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383336	3/18/2023	Kuhnle Brothers	574B	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1456	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383176	3/18/2023	Kuhnle Brothers	574B / 531A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1457	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383335	3/18/2023	Kuhnle Brothers	574B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1458	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383175	3/18/2023	Kuhnle Brothers	531A	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1459	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383147	3/18/2023	Heniff Transportation	266384	Frac Tank	21-1929	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,054	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1460	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383100	3/18/2023	Heniff Transportation	AL4771	Frac Tank	11-1044	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1461	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253870	3/18/2023	Heniff Transportation	266384-513A	Frac Tank	1299	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,126	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1462	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383171	3/18/2023	Heniff Transportation	514A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1463	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253872	3/18/2023	Heniff Transportation	513A	Frac Tank	21-1887	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,092	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1464	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383094	3/18/2023	Heniff Transportation	266384	Frac Tank	21-3855	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1465	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240536	3/18/2023	Heniff Transportation	521B	Frac Tank	1907	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1466	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383399	3/18/2023	Kuhnle Brothers	AL4771	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1467	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240537	3/19/2023	Heniff Transportation	521B	Frac Tank	3RG23127	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1468	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384522	3/19/2023	Kuhnle Brothers	564B	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1469	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383497	3/19/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1470	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384524	3/19/2023	Kuhnle Brothers	564B	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1471	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384518	3/19/2023	Kuhnle Brothers	564B	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1472	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383489	3/19/2023	Heniff Transportation	564B	Frac Tank	1711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1473	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383488	3/19/2023	Heniff Transportation	564B-251694	Frac Tank	21-805	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,083	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1474	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383207	3/19/2023	Kuhnle Brothers	251694	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1475	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383487	3/19/2023	Heniff Transportation	251694	Frac Tank	4707	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1476	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240538	3/19/2023	Heniff Transportation	501F	Frac Tank	11-767	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1477	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383159	3/19/2023	Kuhnle Brothers	252007	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1478	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383498	3/19/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1479	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383452	3/19/2023	Kuhnle Brothers	257400	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1480	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383474	3/19/2023	Heniff Transportation	501F-257400	Frac Tank	11-764	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1481	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383095	3/19/2023	Heniff Transportation	501F	Frac Tank	11-652	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1482	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383451	3/19/2023	Kuhnle Brothers	257400	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1483	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383477	3/19/2023	Heniff Transportation	514E-516F	Frac Tank	00071	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,098	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1484	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384530	3/19/2023	Kuhnle Brothers	514E	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1485	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383450	3/19/2023	Kuhnle Brothers	514E	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1486	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384526	3/19/2023	Kuhnle Brothers	566E	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1487	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384528	3/19/2023	Kuhnle Brothers	566E	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1488	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383478	3/19/2023	Heniff Transportation	538B-566E	Frac Tank	0087	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,064	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1489	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383496	3/19/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1490	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383476	3/19/2023	Heniff Transportation	538B	Frac Tank	11-653	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1491	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383412	3/19/2023	Kuhnle Brothers	538B	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1492	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253967	3/19/2023	Kuhnle Brothers	257728	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1493	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253793	3/19/2023	Kuhnle Brothers	257728	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1494	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383411	3/19/2023	Kuhnle Brothers	257728-538B	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1495	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384515	3/19/2023	Kuhnle Brothers	257400	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1496	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383453	3/19/2023	Kuhnle Brothers	251091	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1497	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383454	3/19/2023	Kuhnle Brothers	251091	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1498	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383472	3/19/2023	Heniff Transportation	252007	Frac Tank	21-1748	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,067	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1499	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383473	3/19/2023	Heniff Transportation	252007	Frac Tank	1779	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,106	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1500	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384513	3/20/2023	Kuhnle Brothers	AL5484	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1501	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384505	3/20/2023	Kuhnle Brothers	AL4710	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1502	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384507	3/20/2023	Kuhnle Brothers	AL4710	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1503	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384558	3/20/2023	Kuhnle Brothers	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1504	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383403	3/20/2023	Kuhnle Brothers	AL5484	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1505	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383426	3/20/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1506	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384517	3/20/2023	Kuhnle Brothers	AL5484	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1507	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384511	3/20/2023	Kuhnle Brothers	256729	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1508	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383447	3/20/2023	Kuhnle Brothers	256729	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1509	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383448	3/20/2023	Kuhnle Brothers	255950	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1510	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384503	3/20/2023	Kuhnle Brothers	255950	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1511	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384501	3/20/2023	Kuhnle Brothers	266240/255950	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1512	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384534	3/20/2023	Kuhnle Brothers	266240	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1513	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384532	3/20/2023	Kuhnle Brothers	266240	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1514	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240808	2/22/2023	Robbie D Wood	AL4944	Frac Tank	SIRV101	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	5,150	5,179	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1515	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240791	2/23/2023	Kuhnle Brothers	266384/513A	Frac Tank	1221	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1516	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	6440232333	025240792	2/22/2023	Kuhnle Brothers	251782	Frac Tank	731	Romulus U.S. Ecology	28470 Citrin Drive Romulus, MI 48174	MIR000016055	Received	5,139	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1517	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253792	3/20/2023	Kuhnle Brothers	257019	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1518	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383445	3/20/2023	Kuhnle Brothers	257019	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1519	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383446	3/20/2023	Kuhnle Brothers	756729	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1520	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384509	3/20/2023	Kuhnle Brothers	AL4710	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1521	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383443	3/20/2023	Kuhnle Brothers	531A	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1522	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383444	3/20/2023	Kuhnle Brothers	AL4710 / 531A	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1523	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384557	3/20/2023	Heritage Transport	253085 / 252007	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1524	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384647	3/20/2023	Heritage Transport	253085	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1525	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383479	3/20/2023	Heniff Transportation	AL4710	Frac Tank	3RG23164	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1526	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384635	3/20/2023	Kuhnle Brothers	531A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1527	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025240818	2/22/2023	Action Resources	513A	Frac Tank	SIR0008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	Received	4,493	4,815	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1528	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384633	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1529	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383439	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1530	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384634	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1531	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383437	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1532	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383441	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,123	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1533	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384628	3/21/2023	Kuhnle Brothers	AL5679	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,248	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1534	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384627	3/21/2023	Kuhnle Brothers	AL5679	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1535	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384626	3/21/2023	Kuhnle Brothers	AL5679	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1536	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384614	3/21/2023	Kuhnle Brothers	AL4216/ AL5679	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1537	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384625	3/21/2023	Kuhnle Brothers	574B/AL 5735/AL 4216	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1538	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384613	3/21/2023	Kuhnle Brothers	574B	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,069	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1539	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383436	3/21/2023	Kuhnle Brothers	574B	Frac Tank	1221	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1540	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384612	3/21/2023	Kuhnle Brothers	574B	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1541	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384624	3/21/2023	Kuhnle Brothers	AL4735 / 574B	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1542	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384611	3/21/2023	Kuhnle Brothers	AL5735	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1543	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384623	3/21/2023	Kuhnle Brothers	AL5735	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1544	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383440	3/21/2023	Kuhnle Brothers	513A	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1545	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384599	3/21/2023	Kuhnle Brothers	266384	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,108	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1546	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384598	3/21/2023	Kuhnle Brothers	266384	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1547	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383438	3/21/2023	Kuhnle Brothers	266384	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1548	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384643	3/21/2023	Kuhnle Brothers	555D	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1549	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384644	3/21/2023	Kuhnle Brothers	460119- 555D	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1550	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383442	3/21/2023	Kuhnle Brothers	460119	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1551	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384642	3/21/2023	Kuhnle Brothers	460119	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1552	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384641	3/21/2023	Kuhnle Brothers	251014 / 460119	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1553	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384640	3/21/2023	Kuhnle Brothers	251014	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1554	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384639	3/21/2023	Kuhnle Brothers	251014	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1555	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384638	3/21/2023	Kuhnle Brothers	251320 / 27599	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1556	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384637	3/21/2023	Kuhnle Brothers	251320	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1557	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384636	3/21/2023	Kuhnle Brothers	251320	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1558	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384622	3/21/2023	Kuhnle Brothers	AL4944	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1559	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384645	3/22/2023	Kuhnle Brothers	AL4944/ 256043	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1560	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384600	3/22/2023	Kuhnle Brothers	256043	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1561	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384646	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1562	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383346	3/22/2023	Kuhnle Brothers	256043	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,263	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1563	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383345	3/22/2023	Kuhnle Brothers	256043	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1564	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383401	3/22/2023	Kuhnle Brothers	513A	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,122	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1565	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384711	3/22/2023	Kuhnle Brothers	AL4771	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1566	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384712	3/22/2023	Kuhnle Brothers	AL4771	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1567	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384714	3/22/2023	Kuhnle Brothers	AL4771	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1568	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384601	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1569	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384602	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1570	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384603	3/22/2023	Kuhnle Brothers	AL4944/ AL5679	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1571	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384604	3/22/2023	Kuhnle Brothers	AL5679	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1572	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384605	3/22/2023	Kuhnle Brothers	AL5679/ AL4944	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,269	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1573	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384606	3/22/2023	Kuhnle Brothers	AL9499	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1574	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384710	3/22/2023	Kuhnle Brothers	AL5679	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1575	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383344	3/22/2023	Kuhnle Brothers	521B	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1576	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384631	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1577	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383173	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1578	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384607	3/22/2023	Kuhnle Brothers	AL4944	Frac Tank	872	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1579	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384608	3/22/2023	Kuhnle Brothers	AL4944/ AL4787	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1580	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384616	3/22/2023	Kuhnle Brothers	531A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1581	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384713	3/22/2023	Kuhnle Brothers	AL4771	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1582	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384746	3/22/2023	Kuhnle Brothers	532A/52 1B	Frac Tank	1264	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1583	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384615	3/22/2023	Kuhnle Brothers	521B	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1584	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384590	3/22/2023	Kuhnle Brothers	251079	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1585	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384588	3/22/2023	Kuhnle Brothers	251026	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1586	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384589	3/22/2023	Kuhnle Brothers	251026	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1587	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384596	3/22/2023	Kuhnle Brothers	AL4755	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1588	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384587	3/22/2023	Kuhnle Brothers	755 / 251	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1589	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384595	3/22/2023	Kuhnle Brothers	AL4755	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1590	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384597	3/22/2023	Kuhnle Brothers	AL4754	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1591	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384593	3/22/2023	Kuhnle Brothers	AL4754	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1592	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384592	3/22/2023	Kuhnle Brothers	AL4754	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1593	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025383434	3/22/2023	Kuhnle Brothers	AL4754	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,248	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1594	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384702	3/22/2023	Kuhnle Brothers	251079	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1595	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384708	3/23/2023	Kuhnle Brothers	501F	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1596	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384591	3/23/2023	Kuhnle Brothers	251079/251091	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1597	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384701	3/23/2023	Kuhnle Brothers	501F/252007	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1598	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384700	3/23/2023	Kuhnle Brothers	252007	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1599	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384698	3/23/2023	Kuhnle Brothers	252007	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1600	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384695	3/23/2023	Kuhnle Brothers	252007/253085	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1601	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384696	3/23/2023	Kuhnle Brothers	253085	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,006	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1602	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384703	3/23/2023	Kuhnle Brothers	251091	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,036	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1603	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384706	3/23/2023	Kuhnle Brothers	501F	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1604	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384704	3/23/2023	Kuhnle Brothers	251091	Frac Tank	943	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1605	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384705	3/23/2023	Kuhnle Brothers	251091 / 501F	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1606	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384722	3/23/2023	Kuhnle Brothers	251650	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1607	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384715	3/23/2023	Kuhnle Brothers	253085	Frac Tank	1254	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,864	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1608	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384721	3/23/2023	Kuhnle Brothers	AL4755	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1609	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384709	3/23/2023	Kuhnle Brothers	251026	Frac Tank	633	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,023	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1610	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384720	3/23/2023	Kuhnle Brothers	256094	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,995	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1611	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384716	3/23/2023	Kuhnle Brothers	251863/251633	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1612	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384747	3/23/2023	Kuhnle Brothers	251478	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,982	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1613	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384652	3/23/2023	Kuhnle Brothers	532A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1614	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384880	3/23/2023	Kuhnle Brothers	251026	Frac Tank	677	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,124	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1615	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384651	3/23/2023	Kuhnle Brothers	251026/AL4755	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,065	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1616	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384619	3/23/2023	Kuhnle Brothers	AL4755	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1617	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384618	3/23/2023	Kuhnle Brothers	513A	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1618	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383343	3/23/2023	Kuhnle Brothers	513A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1619	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384649	3/23/2023	Kuhnle Brothers	513A	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1620	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384610	3/23/2023	Kuhnle Brothers	253085	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,863	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1621	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384882	3/23/2023	Kuhnle Brothers	251650	Frac Tank	1194	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1622	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384781	3/23/2023	Kuhnle Brothers	251633/2560944	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1623	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384879	3/23/2023	Kuhnle Brothers	251478	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1624	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384867	3/23/2023	Kuhnle Brothers	251321	Frac Tank	1195	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1625	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384779	3/23/2023	Kuhnle Brothers	251683	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1626	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253791	3/23/2023	Kuhnle Brothers	251321	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1627	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384648	3/23/2023	Kuhnle Brothers	532A	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1628	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384621	3/23/2023	Kuhnle Brothers	2.5E+07	Frac Tank	532A	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1629	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384785	3/23/2023	Kuhnle Brothers	256094	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,997	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1630	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384630	3/23/2023	Kuhnle Brothers	256094	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1631	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384629	3/23/2023	Kuhnle Brothers	251478	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1632	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384719	3/23/2023	Kuhnle Brothers	251871	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,140	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1633	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384723	3/23/2023	Kuhnle Brothers	AL5645	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,957	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1634	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384664	3/23/2023	Kuhnle Brothers	251650/AL5645	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1635	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384878	3/23/2023	Kuhnle Brothers	251321/251683	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1636	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384877	3/23/2023	Kuhnle Brothers	251683	Frac Tank	1008	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,961	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1637	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384876	3/23/2023	Kuhnle Brothers	251633	Frac Tank	898	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,961	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1638	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384874	3/23/2023	Kuhnle Brothers	252651	Frac Tank	649	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1639	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384657	3/23/2023	Kuhnle Brothers	252651	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1640	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384769	3/23/2023	Kuhnle Brothers	AL5645	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1641	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384662	3/23/2023	Kuhnle Brothers	252651	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1642	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384661	3/23/2023	Kuhnle Brothers	251871	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1643	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384875	3/23/2023	Kuhnle Brothers	251321	Frac Tank	1214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,957	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1644	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384673	3/23/2023	Kuhnle Brothers	560B	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1645	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384674	3/23/2023	Kuhnle Brothers	560B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1646	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384675	3/23/2023	Kuhnle Brothers	560B	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1647	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384665	3/23/2023	Kuhnle Brothers	AL4787	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1648	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384666	3/23/2023	Kuhnle Brothers	AL4787	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1649	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384667	3/23/2023	Kuhnle Brothers	AL4787	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1650	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384669	3/23/2023	Kuhnle Brothers	AL4216	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1651	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384671	3/23/2023	Kuhnle Brothers	560B	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1652	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384672	3/23/2023	Kuhnle Brothers	AL4216/560B	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1653	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384668	3/23/2023	Kuhnle Brothers	AL4787/AL4216	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,075	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1654	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384676	3/24/2023	Kuhnle Brothers	5679	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1655	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384677	3/24/2023	Kuhnle Brothers	560B / 5679	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1656	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384678	3/24/2023	Kuhnle Brothers	5679	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1657	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384679	3/24/2023	Kuhnle Brothers	5679 / 4944	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1658	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384680	3/24/2023	Kuhnle Brothers	4944	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1659	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384681	3/24/2023	Kuhnle Brothers	4944	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1660	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384682	3/24/2023	Kuhnle Brothers	4944	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1661	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384683	3/24/2023	Kuhnle Brothers	4944/564B	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1662	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384684	3/24/2023	Kuhnle Brothers	569B	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1663	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384685	3/24/2023	Kuhnle Brothers	569B	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,036	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1664	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384686	3/24/2023	Kuhnle Brothers	559B/251694	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1665	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384687	3/24/2023	Kuhnle Brothers	251699	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1666	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384688	3/24/2023	Kuhnle Brothers	251699	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1667	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384718	3/24/2023	Kuhnle Brothers	511A	Frac Tank	817	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273818	In Transit	4,954	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1668	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384717	3/24/2023	Kuhnle Brothers	511A	Frac Tank	1121	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,883	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1669	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384931	3/24/2023	Heniff Transportation	AL4787	Frac Tank	41-3948	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1670	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384930	3/24/2023	Heniff Transportation	AL4787	Frac Tank	111282	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1671	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384863	3/24/2023	Kuhnle Brothers	AL4787	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1672	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384860	3/24/2023	Kuhnle Brothers	511A/566B	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1673	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384864	3/24/2023	Kuhnle Brothers	AL4710	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1674	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384859	3/24/2023	Kuhnle Brothers	251650/511A	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,891	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1675	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384858	3/24/2023	Kuhnle Brothers	251650	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,850	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1676	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384857	3/24/2023	Kuhnle Brothers	251650	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1677	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384861	3/24/2023	Kuhnle Brothers	251650	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,891	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1678	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384693	3/24/2023	Kuhnle Brothers	257761	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1679	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384692	3/24/2023	Kuhnle Brothers	257761	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,893	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1680	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384911	3/24/2023	Quality Carriers	593D	Frac Tank	701137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1681	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384929	3/24/2023	Heniff Transportation	593D	Frac Tank	11-1231	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1682	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384912	3/24/2023	Heniff Transportation	566B/593D	Frac Tank	1884	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,889	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1683	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384881	3/24/2023	Kuhnle Brothers	566B	Frac Tank	1216	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1684	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384690	3/24/2023	Kuhnle Brothers	566B	Frac Tank	922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1685	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384932	3/24/2023	Heniff Transportation	531A	Frac Tank	11-1229	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1686	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384726	3/24/2023	Kuhnle Brothers	531A	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1687	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384910	3/24/2023	Quality Carriers	AL5484	Frac Tank	CH7146	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1688	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384724	3/24/2023	Kuhnle Brothers	574B	Frac Tank	926	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1689	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384865	3/24/2023	Kuhnle Brothers	AL5484	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1690	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384659	3/24/2023	Kuhnle Brothers	AL4710/AL5484	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1691	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384862	3/24/2023	Kuhnle Brothers	AL4710	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1692	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384866	3/24/2023	Kuhnle Brothers	AL4710	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1693	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384819	3/24/2023	Kuhnle Brothers	251871	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,948	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1694	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384928	3/24/2023	Heniff Transportation	593D/572A	Frac Tank	DH08	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,930	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1695	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384697	3/24/2023	Kuhnle Brothers	257761/251871	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1696	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384694	3/24/2023	Kuhnle Brothers	257761	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,891	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1697	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384727	3/24/2023	Kuhnle Brothers	593D	Frac Tank	922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1698	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384927	3/24/2023	Heniff Transportation	572A	Frac Tank	00071	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1699	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384933	3/24/2023	Heniff Transportation	531A / 574B	Frac Tank	00066	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1700	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384725	3/24/2023	Kuhnle Brothers	574B	Frac Tank	550/872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,065	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1701	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384830	3/24/2023	Kuhnle Brothers	257204	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1702	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384829	3/24/2023	Kuhnle Brothers	572A / 257204	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1703	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384828	3/24/2023	Kuhnle Brothers	572A	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1704	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384908	3/24/2023	Quality Carriers	572A	Frac Tank	700507	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1705	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383480	3/24/2023	Heniff Transportation	572A / 507F	Frac Tank	11-1122	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1706	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384825	3/24/2023	Kuhnle Brothers	572A	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1707	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384909	3/24/2023	Quality Carriers	507F	Frac Tank	R124	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1708	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384827	3/24/2023	Kuhnle Brothers	251688	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1709	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384826	3/24/2023	Kuhnle Brothers	251688	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1710	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384824	3/24/2023	Kuhnle Brothers	251851 / 251688	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1711	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384823	3/24/2023	Kuhnle Brothers	251851	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1712	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384822	3/24/2023	Kuhnle Brothers	251851	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1713	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384821	3/24/2023	Kuhnle Brothers	251871	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1714	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384820	3/24/2023	Kuhnle Brothers	251871	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1715	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384831	3/25/2023	Kuhnle Brothers	257204	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1716	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384838	3/25/2023	Kuhnle Brothers	AL4754	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1717	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384837	3/25/2023	Kuhnle Brothers	251026	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1718	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384839	3/25/2023	Kuhnle Brothers	AL4754	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1719	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384836	3/25/2023	Kuhnle Brothers	251026	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1720	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384835	3/25/2023	Kuhnle Brothers	251026	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1721	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384834	3/25/2023	Kuhnle Brothers	251060	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1722	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384833	3/25/2023	Kuhnle Brothers	251060	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1723	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384832	3/25/2023	Kuhnle Brothers	251060	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,006	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1724	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384818	3/25/2023	Kuhnle Brothers	266240	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1725	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384814	3/25/2023	Kuhnle Brothers	266240	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1726	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384934	3/25/2023	Heniff Transportation	266240 / 255950	Frac Tank	2615	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,047	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1727	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384902	3/25/2023	Quality Carriers	255950	Frac Tank	T510S	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,047	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1728	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384915	3/25/2023	Heniff Transportation	255950	Frac Tank	11672	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1729	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384904	3/25/2023	Quality Carriers	251320	Frac Tank	702814	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1730	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384913	3/25/2023	Heniff Transportation	521B	Frac Tank	CC7083	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,099	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1731	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384843	3/25/2023	Kuhnle Brothers	521B/251026/AL4755	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1732	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384793	3/25/2023	Kuhnle Brothers	AL4755	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,093	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1733	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384795	3/25/2023	Kuhnle Brothers	AL4755	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1734	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384797	3/25/2023	Kuhnle Brothers	AL4755	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1735	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384791	3/25/2023	Kuhnle Brothers	North Ditch	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1736	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384761	3/25/2023	Kuhnle Brothers	North Ditch	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1737	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384759	3/25/2023	Kuhnle Brothers	North Ditch	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1738	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384763	3/25/2023	Kuhnle Brothers	North Ditch	Frac Tank	549	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1739	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384907	3/25/2023	Quality Carriers	AL4755 / 532A	Frac Tank	701920	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1740	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384789	3/25/2023	Kuhnle Brothers	North Ditch	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1741	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384914	3/25/2023	Heniff Transportation	256729	Frac Tank	11936	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1742	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384813	3/25/2023	Kuhnle Brothers	256729	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1743	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384903	3/25/2023	Quality Carriers	256729	Frac Tank	70579	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1744	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384916	3/25/2023	Heniff Transportation	251320	Frac Tank	11462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1745	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384906	3/25/2023	Quality Carriers	251320	Frac Tank	70774	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1746	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384842	3/25/2023	Kuhnle Brothers	521B	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1747	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384841	3/25/2023	Kuhnle Brothers	AL4754 / 521B	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,036	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1748	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384840	3/25/2023	Kuhnle Brothers	AL4754	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1749	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384799	3/25/2023	Kuhnle Brothers	AL4771	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1750	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384900	3/25/2023	Quality Carriers	AL4771	Frac Tank	701643	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1751	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384801	3/25/2023	Kuhnle Brothers	532A	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1752	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384926	3/25/2023	Heniff Transportation	532A	Frac Tank	11-1246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1753	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384850	3/26/2023	Kuhnle Brothers	507F	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG4
1754	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384849	3/26/2023	Kuhnle Brothers	507F	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,056	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG5
1755	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384848	3/26/2023	Kuhnle Brothers	5740/507F	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG6
1756	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384847	3/26/2023	Kuhnle Brothers	574D	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG7
1757	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384846	3/26/2023	Kuhnle Brothers	574D	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG8
1758	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384851	3/26/2023	Kuhnle Brothers	257024	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG9
1759	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384852	3/26/2023	Kuhnle Brothers	27204	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG10
1760	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384803	3/26/2023	Kuhnle Brothers	257204	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG11
1761	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384765	3/26/2023	Kuhnle Brothers	574B	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1762	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384845	3/26/2023	Kuhnle Brothers	507F	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1763	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384844	3/26/2023	Kuhnle Brothers	507F	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1764	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384656	3/26/2023	Kuhnle Brothers	572A	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,973	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1765	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384655	3/26/2023	Kuhnle Brothers	572A	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1766	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384729	3/26/2023	Kuhnle Brothers	572A	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1767	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384654	3/26/2023	Kuhnle Brothers	593D	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,973	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1768	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384755	3/26/2023	Kuhnle Brothers	AL5484	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,988	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1769	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384787	3/26/2023	Kuhnle Brothers	AL5484	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1770	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383347	3/26/2023	Kuhnle Brothers	AL5484	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1771	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384817	3/26/2023	Kuhnle Brothers	251014/257019	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,893	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1772	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384810	3/26/2023	Kuhnle Brothers	257019	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1773	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384811	3/26/2023	Kuhnle Brothers	257019	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1774	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384812	3/26/2023	Kuhnle Brothers	257019	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1775	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383348	3/26/2023	Kuhnle Brothers	AL5484	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1776	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384887	3/26/2023	Quality Carriers	4743/AL5484	Frac Tank	702867	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1777	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384855	3/26/2023	Kuhnle Brothers	5748	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1778	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384856	3/26/2023	Kuhnle Brothers	574B	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1779	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384925	3/26/2023	Heniff Transportation	566B/592D	Frac Tank	1299	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1780	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384653	3/26/2023	Kuhnle Brothers	593D	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1781	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384888	3/26/2023	Quality Carriers	593D	Frac Tank	707997	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,889	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1782	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383485	3/26/2023	Heniff Transportation	251014	Frac Tank	213698	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1783	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383469	3/26/2023	Heniff Transportation	AL4710	Frac Tank	213707	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,086	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1784	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384771	3/26/2023	Kuhnle Brothers	AL4710	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1785	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384783	3/26/2023	Kuhnle Brothers	566B	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,892	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1786	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384658	3/26/2023	Kuhnle Brothers	AL5645	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1787	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH893850	025384728	3/26/2023	Kuhnle Brothers	260119	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,050	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1788	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384816	3/26/2023	Kuhnle Brothers	260119	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1789	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384663	3/26/2023	Kuhnle Brothers	566B / AL5645	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,973	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1790	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384965	3/26/2023	Kuhnle Brothers	AL4754	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1791	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384957	3/26/2023	Kuhnle Brothers	AL4754	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1792	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384956	3/26/2023	Kuhnle Brothers	521B	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,970	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1793	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384955	3/26/2023	Kuhnle Brothers	521B	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,964	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1794	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384966	3/26/2023	Kuhnle Brothers	532A / 521B	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,975	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1795	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384660	3/26/2023	Kuhnle Brothers	532A	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,942	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1796	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384954	3/26/2023	Kuhnle Brothers	532A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,938	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1797	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384775	3/26/2023	Kuhnle Brothers	532A	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1798	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384889	3/26/2023	Quality Carriers	AL4771	Frac Tank	703096	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1799	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384953	3/26/2023	Kuhnle Brothers	AL4771	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1800	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384952	3/26/2023	Kuhnle Brothers	AL4771	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1801	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384964	3/26/2023	Kuhnle Brothers	AL4754 / AL4755	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1802	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384970	3/27/2023	Kuhnle Brothers	513A	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,958	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1803	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384967	3/27/2023	Kuhnle Brothers	513A	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1804	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384968	3/27/2023	Kuhnle Brothers	251026 / 513A	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1805	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384961	3/27/2023	Kuhnle Brothers	251026	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1806	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384960	3/27/2023	Kuhnle Brothers	251026	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,964	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1807	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384962	3/27/2023	Kuhnle Brothers	AL4755 / 251026	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,975	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1808	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384959	3/27/2023	Kuhnle Brothers	AL4755	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,942	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1809	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384958	3/27/2023	Kuhnle Brothers	AL4755	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,958	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1810	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384969	3/27/2023	Kuhnle Brothers	513A / 266384	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,942	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG12
1811	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383468	3/27/2023	Kuhnle Brothers	251688	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1812	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384871	3/27/2023	Kuhnle Brothers	251688	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1813	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384972	3/27/2023	Kuhnle Brothers	251688	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1814	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384971	3/27/2023	Kuhnle Brothers	266384	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,964	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1815	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384973	3/27/2023	Kuhnle Brothers	266384	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,975	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1816	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384735	3/27/2023	Kuhnle Brothers	511A/593D	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1817	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384982	3/27/2023	Kuhnle Brothers	511A	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,893	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1818	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384983	3/27/2023	Kuhnle Brothers	511A	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1819	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384736	3/27/2023	Kuhnle Brothers	251650/ 511A	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,905	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1820	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383484	3/27/2023	Heniff Transportation	251650	Frac Tank	5246	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,968	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1821	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384809	3/27/2023	Kuhnle Brothers	572A/507F	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1822	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384890	3/27/2023	Quality Carriers	593D	Frac Tank	701865	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,969	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1823	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384987	3/27/2023	Kuhnle Brothers	593D	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1824	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384988	3/27/2023	Kuhnle Brothers	572A	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1825	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384731	3/27/2023	Kuhnle Brothers	537A	Frac Tank	550/872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1826	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384936	3/27/2023	Heniff Transportation	AL5679	Frac Tank	LT-1879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,954	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1827	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384992	3/27/2023	Kuhnle Brothers	AL5679	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1828	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384892	3/27/2023	Quality Carriers	593D/572A	Frac Tank	65697	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1829	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384975	3/27/2023	Kuhnle Brothers	531A	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1830	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384976	3/27/2023	Kuhnle Brothers	531A/AL4735	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1831	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384986	3/27/2023	Kuhnle Brothers	251650	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1832	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384984	3/27/2023	Kuhnle Brothers	AL5645 / 251650	Frac Tank	542	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1833	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384730	3/27/2023	Kuhnle Brothers	AL5645	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,757	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1834	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383486	3/27/2023	Heniff Transportation	AL5645	Frac Tank	11764	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,889	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1835	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384985	3/27/2023	Kuhnle Brothers	AL5645	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,891	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1836	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384854	3/27/2023	Kuhnle Brothers	531A	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1837	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384974	3/27/2023	Kuhnle Brothers	531A / AL4787	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,973	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1838	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384853	3/27/2023	Kuhnle Brothers	AL4787	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1839	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384815	3/27/2023	Kuhnle Brothers	AL4787	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1840	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383482	3/27/2023	Heniff Transportation	AL4710 / AL4787	Frac Tank	1582	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1841	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384977	3/27/2023	Kuhnle Brothers	AL4735	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1842	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384773	3/27/2023	Kuhnle Brothers	AL4735	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1843	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384980	3/27/2023	Kuhnle Brothers	AL4735	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,058	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1844	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384935	3/27/2023	Heniff Transportation	AL4735	Frac Tank	11-67B	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1845	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384734	3/27/2023	Kuhnle Brothers	256043 / 537A	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,957	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1846	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384732	3/27/2023	Kuhnle Brothers	537A	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1847	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384991	3/27/2023	Kuhnle Brothers	537A	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,500	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1848	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384733	3/27/2023	Kuhnle Brothers	572A	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1849	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384990	3/27/2023	Kuhnle Brothers	537A / AL4944	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1850	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384989	3/27/2023	Kuhnle Brothers	AL4944 / AL5679	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,003	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1851	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384999	3/27/2023	Kuhnle Brothers	251782 / 251871	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,980	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1852	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025385000	3/27/2023	Kuhnle Brothers	251782	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,971	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1853	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384807	3/27/2023	Kuhnle Brothers	251782	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,958	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1854	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384808	3/27/2023	Kuhnle Brothers	251782	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1855	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427025	3/28/2023	Kuhnle Brothers	252651 / 251688	Frac Tank	1254	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1856	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384886	3/28/2023	Kuhnle Brothers	AL4787	Frac Tank	1006	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1857	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384743	3/28/2023	Kuhnle Brothers	AL5679 / 560B	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1858	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384739	3/28/2023	Kuhnle Brothers	AL4216	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1859	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384738	3/28/2023	Kuhnle Brothers	AL4787	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1860	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384873	3/28/2023	Kuhnle Brothers	AL4216	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1861	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384872	3/28/2023	Kuhnle Brothers	560B	Frac Tank	1212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1862	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253983	3/28/2023	Robbie D Wood	560B / AL4216	Frac Tank	LT2286	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1863	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384740	3/28/2023	Kuhnle Brothers	560B	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1864	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427019	3/28/2023	Kuhnle Brothers	252651	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,971	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1865	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427020	3/28/2023	Kuhnle Brothers	252651	Frac Tank	746	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1866	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427018	3/28/2023	Kuhnle Brothers	252651	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,980	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1867	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384742	3/28/2023	Kuhnle Brothers	251871	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,908	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1868	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384741	3/28/2023	Kuhnle Brothers	251871 / 252651	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,905	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1869	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427017	3/28/2023	Kuhnle Brothers	251871	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,953	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1870	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384899	3/27/2023	Quality Carriers	507F	Frac Tank	CH8122	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1871	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384920	3/28/2023	Heniff Transportation	AL5679	Frac Tank	4892	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1872	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383300	3/28/2023	Action Resources	AL4787	Frac Tank	SIR0098	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,954	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1873	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427002	3/28/2023	Kuhnle Brothers	507F	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,948	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1874	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427003	3/28/2023	Kuhnle Brothers	507F	Frac Tank	1195	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1875	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427077	3/29/2023	Robbie D Wood	251782	Frac Tank	LT-2218	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1876	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384898	3/29/2023	Quality Carriers	257204	Frac Tank	701157	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1877	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427047	3/29/2023	Kuhnle Brothers	251694	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1878	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427046	3/29/2023	Kuhnle Brothers	251060	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1879	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427045	3/29/2023	Kuhnle Brothers	251688 / 251782	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1880	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427008	3/29/2023	Kuhnle Brothers	257204	Frac Tank	1216	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1881	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427012	3/29/2023	Kuhnle Brothers	251688	Frac Tank	771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1882	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427127	3/29/2023	Quality Carriers	257761	Frac Tank	702913	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,989	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1883	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427043	3/29/2023	Kuhnle Brothers	251060	Frac Tank	5501872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,977	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1884	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427007	3/29/2023	Kuhnle Brothers	257761	Frac Tank	633	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1885	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383010	3/29/2023	Action Resources	564B	Frac Tank	SIR0089	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1886	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427041	3/29/2023	Kuhnle Brothers	257761/251871	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,981	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1887	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427042	3/29/2023	Kuhnle Brothers	251694	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,976	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1888	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253997	3/29/2023	Altom Transport	251694	Frac Tank	T21639	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,021	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1889	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427113	3/29/2023	Heniff Transportation	5643	Frac Tank	11879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,999	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1890	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427022	3/29/2023	Kuhnle Brothers	251871	Frac Tank	733	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1891	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427115	3/29/2023	Quality Carriers	574D	Frac Tank	7298	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1892	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427011	3/29/2023	Kuhnle Brothers	251060	Frac Tank	1121	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1893	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427009	3/29/2023	Kuhnle Brothers	572A	Frac Tank	1268	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1894	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384744	3/29/2023	Kuhnle Brothers	251688	Frac Tank	733	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,983	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1895	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427013	3/29/2023	Kuhnle Brothers	572A	Frac Tank	1214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,007	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1896	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427128	3/29/2023	Quality Carriers	572A	Frac Tank	702846	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1897	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427044	3/29/2023	Kuhnle Brothers	251782 / 257761	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1898	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384919	3/29/2023	Heniff Transportation	572A / 257204	Frac Tank	LT-748	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,915	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1899	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427132	3/29/2023	Kuhnle Brothers	AL5484	Frac Tank	1194	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1900	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427131	3/29/2023	Kuhnle Brothers	AL4787	Frac Tank	870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1901	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427130	3/29/2023	Kuhnle Brothers	AL4787	Frac Tank	649	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1902	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384737	3/29/2023	Kuhnle Brothers	AL4787	Frac Tank	922	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,983	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1903	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427116	3/29/2023	Quality Carriers	574D	Frac Tank	703458	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1904	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427122	3/29/2023	Quality Carriers	574D / 593D	Frac Tank	702755	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1905	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384905	3/29/2023	Quality Carriers	593D	Frac Tank	701333	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,100	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1906	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427108	3/30/2023	Heniff Transportation Systems, LLC	AL4735	Frac Tank	5256	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,126	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1907	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427109	3/30/2023	Heniff Transportation Systems, LLC	566B	Frac Tank	70215	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,127	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1908	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427110	3/30/2023	Heniff Transportation Systems, LLC	566B	Frac Tank	11-771	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1909	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384891	3/30/2023	Quality Carriers	593D	Frac Tank	701560 RS	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,170	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1910	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427169	3/30/2023	Vickery Transportation	598D/566B	Frac Tank	7966	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1911	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025384745	3/30/2023	Kuhnle Brothers	AL5645	Frac Tank	871	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,995	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1912	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427168	3/30/2023	Vickery Transportation	AL5645	Frac Tank	5850	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1913	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427083	3/30/2023	Heniff Transportation	532A	Frac Tank	1870	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1914	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427084	3/30/2023	Heniff Transportation	AL5645	Frac Tank	LT-1761	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,981	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1915	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427053	3/30/2023	Kuhnle Brothers	555D	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1916	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427050	3/30/2023	Kuhnle Brothers	251014	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,958	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1917	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427123	3/30/2023	Quality Carriers	555D	Frac Tank	702930	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1918	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427124	3/30/2023	Quality Carriers	251014	Frac Tank	701682	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1919	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427049	3/30/2023	Kuhnle Brothers	251014	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1920	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427054	3/30/2023	Kuhnle Brothers	555D	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1921	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427151	3/30/2023	Altom Transport	260119	Frac Tank	T21428	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1922	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427117	3/30/2023	Quality Carriers	AL4738	Frac tank	65774	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1923	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427157	3/30/2023	Quality Carriers	AL4771/AL4738	Frac Tank	701858	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,969	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1924	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383483	3/30/2023	Heniff Transportation	AL4771	Frac Tank	21-2024	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,970	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1925	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427125	3/30/2023	Quality Carriers	AL4771	Frac Tank	4838	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,986	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1926	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427082	3/30/2023	Heniff Transportation	AL4771	Frac Tank	CC7063	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1927	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427118	3/30/2023	Quality Carriers	AL4771	Frac tank	21-3413	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,989	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1928	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427119	3/30/2023	Quality Carriers	AL4771/532A	Frac tank	01117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,973	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1929	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427120	3/30/2023	Quality Carriers	532A	Frac tank	21-1947	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1930	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427121	3/30/2023	Quality Carriers	532A	Frac tank	11-1232	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1931	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427158	3/30/2023	Quality Carriers	511A	Frac tank	700506	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1932	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427165	3/30/2023	Vickery Transportation	511A	Frac tank	63752	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1933	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427051	3/30/2023	Kuhnle Brothers	511A	Frac tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1934	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427052	3/30/2023	Kuhnle Brothers	AL5645/511A	Frac tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1935	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427161	3/30/2023	Quality Carriers	257019	Frac tank	702312	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,021	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1936	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427079	3/30/2023	Robbie D Wood	260119	Frac tank	SIRV122	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1937	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427126	3/30/2023	Quality Carriers	260119	Frac tank	702218	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,021	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1938	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427224	3/30/2023	Heniff Transportation	257019/256729	Frac tank	111042	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,932	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1939	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427182	3/30/2023	Quality Carriers	257019	Frac tank	702957	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1940	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384921	3/30/2023	Heniff Transportation	511A	Frac Tank	1093	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1941	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384924	3/30/2023	Heniff Transportation	AL4738	Frac Tank	21-1943	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1942	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427155	3/30/2023	Quality Carriers	511A	Frac Tank	70476	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1943	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427215	3/30/2023	Heniff Transportation	511A	Frac Tank	598	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1944	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384922	3/30/2023	Heniff Transportation	521B	Frac Tank	41-913	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,109	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1945	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384923	3/30/2023	Heniff Transportation	266384	Frac Tank	LT-1480	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,135	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1946	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427106	3/30/2023	Heniff Transportation	521B	Frac Tank	00098	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,122	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1947	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427216	3/30/2023	Heniff Transportation	AL4754	Frac Tank	2603	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,113	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1948	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427217	3/30/2023	Heniff Transportation	AL4755 / 251026	Frac Tank	21-1880	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,096	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1949	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427107	3/30/2023	Heniff Transportation	AL4954	Frac Tank	287	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1950	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253988	3/30/2023	Altom Transport	AL4754	Frac Tank	T21651	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,141	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1951	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383007	3/30/2023	Action Resources	521B	Frac Tank	749026	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,123	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1952	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427163	3/30/2023	Vickery Transportation	513A	Frac tank	63745	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1953	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427164	3/30/2023	Vickery Transportation	4755	Frac Tank	306L	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1954	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427166	3/30/2023	Vickery Transportation	513A	Frac Tank	KL751	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,061	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1955	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427167	3/30/2023	Vickery Transportation	513A/26 6384	Frac Tank	3069	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,545	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1956	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427174	3/30/2023	Vickery Transportation	4755	Frac Tank	91969	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1957	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427156	3/30/2023	Quality Carriers	251026	Frac Tank	702797	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1958	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384897	3/30/2023	Quality Carriers	266384	Frac Tank	701732	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,029	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1959	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383217	3/31/2023	Altom Transport	256094	Frac Tank	121450	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1960	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427105	3/31/2023	Heniff Transportation	251026	Frac Tank	11-574	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,105	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1961	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427218	3/31/2023	Heniff Transportation	256094	Frac Tank	41-3948	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1962	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427175	3/31/2023	Schneider National	257400	Frac Tank	21993	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,001	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1963	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427100	3/31/2023	Heniff Transportation	257400	Frac Tank	11592	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1964	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427099	3/31/2023	Heniff Transportation	501F	Frac Tank	413979	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1965	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427207	3/31/2023	Quality Carriers	501F	Frac Tank	701843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1966	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427058	3/31/2023	Kuhnle Brothers	252007 / 501F	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1967	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427206	3/31/2023	Quality Carriers	252007	Frac Tank	70790	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1968	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427219	3/31/2023	Heniff Transportation	256094	Tanker Truck	11-487	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1969	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427220	3/31/2023	Heniff Transportation	265276	Tanker Truck	1572	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,127	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1970	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427057	3/31/2023	Kuhnle Brothers	AL4710	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,470	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1971	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427059	3/31/2023	Kuhnle Brothers	AL4710	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1972	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427060	3/31/2023	Kuhnle Brothers	AL4710/ AL5484	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1973	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427086	3/31/2023	Heniff Transportation	AL4787	Frac Tank	8023	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1974	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427090	3/31/2023	Heniff Transportation	AL4787/ AL4710	Frac Tank	CC70103	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1975	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427173	3/31/2023	Vickery Transporation	257400	Frac Tank	KL752	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1976	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427098	3/31/2023	Heniff Transporation	501F	Frac Tank	11462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1977	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427089	3/31/2023	Heniff Transporation	AL5484	Frac Tank	21-1882	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,967	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1978	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427197	3/31/2023	Quality Carriers	AL4787	Frac Tank	703341	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,988	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1979	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427091	3/31/2023	Heniff Transportation	AL4755	Frac Tank	41-3954	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1980	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427085	3/31/2023	Heniff Transportation	AL4755	Frac Tank	LT-548	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,011	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1981	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427056	3/31/2023	Kuhnle Brothers	255950	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1982	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427201	3/31/2023	Quality Carriers	255950	Frac Tank	70456	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1983	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427055	3/31/2023	Kuhnle Brothers	251320	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1984	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427202	3/31/2023	Quality Carriers	251320	Frac Tank	703203	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1985	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427203	3/31/2023	Quality Carriers	251320	Frac Tank	701718	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,904	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1986	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427048	3/31/2023	Kuhnle Brothers	256729	Frac Tank	871	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1987	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427159	3/31/2023	Quality Carriers	253085	Frac Tank	102952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1988	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427172	3/31/2023	Vickery Transportation	253085	Frac Tank	VT708	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,889	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1989	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427095	3/31/2023	Heniff Transportation	266265	Frac Tank	43253	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1990	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427200	3/31/2023	Qualtiy Carriers		Frac Tank	702767	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1991	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427205	3/31/2023	Quality Carriers	252007	Frac Tank	CC70200	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,963	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1992	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427204	3/31/2023	Quality Carriers	252007 / 253085	Frac Tank	CH7325	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1993	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427152	3/31/2023	Altom Transport	253085	Frac Tank	T21295	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1994	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427097	3/31/2023	Heniff Transportation	266265	Frac Tank	CC7049	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,956	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1995	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427198	3/31/2023	Quality Carriers	AL4787	Frac Tank	701656	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1996	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427092	3/31/2023	Heniff Transportation	521B	Frac Tank	43231	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,129	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1997	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427093	4/1/2023	Heniff Transportation	521B	Frac Tank	413934	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,142	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
1998	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427199	4/1/2023	Quality Carriers	521B	Frac Tank	701335	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,102	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
1999	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427094	4/1/2023	Heniff Transportation	257400	Frac Tank	111052	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2000	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427150	4/1/2023	Allom Transport	257393	Frac Tank	T21238	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,015	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2001	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427104	4/1/2023	Heniff Transportation	257393	Frac Tank	LT-1879	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2002	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427101	4/1/2023	Heniff Transportation	25788	Frac Tank	43-3165	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,051	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2003	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427186	4/1/2023	Quality Carriers	257393 & 251788	Frac Tank	67230	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2004	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427185	4/1/2023	Quality Carriers	251788	Frac Tank	70712	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,007	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2005	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427189	4/1/2023	Quality Carriers	251014	Frac Tank	701137	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2006	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427034	4/1/2023	Action Resources	555D	Frac Tank	SIR0031	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2007	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427196	4/1/2023	Quality Carriers	555D	Frac Tank	J07796	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2008	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427087	4/1/2023	Heniff Transportation	555D	Frac Tank	3343	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2009	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427088	4/1/2023	Heniff Transportation	260119	Frac Tank	03402	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2010	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427195	4/1/2023	Quality Carriers	260119	Frac Tank	65665	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2011	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427184	4/1/2023	Quality Carriers	251788	Frac Tank	CH8978	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2012	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427102	4/2/2023	Heniff Transportation	AL4735	Frac Tank	11-652	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2013	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427191	4/2/2023	Quality Carriers	AL4735	Frac Tank	703212	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2014	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427214	4/2/2023	Quality Carriers	521B	Frac Tank	702759	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2015	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427223	4/2/2023	Heniff Transportation	521B/251026	Frac Tank	413277	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2016	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427111	4/2/2023	Heniff Transportation	521B	Frac Tank	11-1239	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2017	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427190	4/2/2023	Quality Carriers	AL4735	Frac Tank	703301	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,986	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2018	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427114	4/2/2023	Heniff Transportation	AL4735	Frac Tank	41-2000	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,969	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2019	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427160	4/2/2023	Quality Carriers	521B	Frac Tank	703096	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2020	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384893	4/3/2023	Quality Carriers	251320	Frac Tank	703320	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2021	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384894	4/3/2023	Quality Carriers	251320/1255950	Frac Tank	703156	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2022	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384895	4/3/2023	Quality Carriers	256729	Frac Tank	703140	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2023	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384978	4/3/2023	Kuhnle Brothers	257019	Frac Tank	851	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2024	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427001	4/3/2023	Kuhnle Brothers	257019/256729	Frac Tank	843	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2025	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427015	4/3/2023	Kuhnle Brothers	598D/512E	Frac Tank	520	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,057	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2026	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427061	4/3/2023	Kuhnle Brothers	AL4735	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2027	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427062	4/3/2023	Kuhnle Brothers	538A	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2028	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427063	4/3/2023	Kuhnle Brothers	MISSING	Frac Tank	909	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2029	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427064	4/3/2023	Kuhnle Brothers	598D	Frac Tank	976	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2030	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427065	4/3/2023	Kuhnle Brothers	256721/251320	Frac Tank	5501872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2031	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427066	4/3/2023	Kuhnle Brothers	512E	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,980	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2032	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427067	4/3/2023	Kuhnle Brothers	257019	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2033	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427068	4/3/2023	Kuhnle Brothers	512E/256104	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2034	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427136	4/3/2023	Kuhnle Brothers	538A	Frac Tank	1221	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2035	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427183	4/3/2023	Quality Carriers	598D	Frac Tank	CH7057	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2036	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427230	4/3/2023	Quality Carriers	538A/598D	Frac Tank	703014	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2037	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427231	4/3/2023	Quality Carriers	538A	Frac Tank	702514	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2038	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427137	4/3/2023	Kuhnle Brothers	256729	Frac Tank	1209	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,005	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2039	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427208	4/3/2023	Quality Carriers	251014	Frac Tank	701865	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2040	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427209	4/3/2023	Quality Carriers	251014/257019	Frac Tank	65697	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2041	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427212	4/3/2023	Quality Carriers	251014	Frac Tank	702511	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,042	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2042	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427213	4/3/2023	Quality Carriers	251014	Frac Tank	R573	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2043	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427238	4/3/2023	Quality Carriers	256729	Frac Tank	702259	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2044	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427240	4/3/2023	Quality Carriers	251320	Frac Tank	701333	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,005	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2045	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427241	4/3/2023	Quality Carriers	253950	Frac Tank	703217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2046	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427243	4/4/2023	Quality Carriers	260119	Frac Tank	702952	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2047	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427070	4/4/2023	Kuhnle Brothers	260119	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2048	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384981	4/4/2023	Kuhnle Brothers	555D / 260119	Frac Tank	794	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2049	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427266	4/4/2023	Kuhnle Brothers	555D	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2050	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427258	4/4/2023	Altom Transport	555D	Frac Tank	T21284	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2051	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427135	4/4/2023	Kuhnle Brothers	555D	Frac Tank	888	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,988	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2052	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427228	4/4/2023	Heniff Transportation	257400	Frac Tank	21-3251	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,968	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2053	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427225	4/4/2023	Heniff Transportation	251026	Frac Tank	1300	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2054	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427227	4/4/2023	Heniff Transportation	257400	Frac Tank	49-0477	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,998	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2055	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427232	4/4/2023	Quality Carriers	251026	Frac Tank	L8169	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2056	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253643	4/4/2023	SJ Transportation	266240/555D	Frac Tank	TV-250	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,910	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2057	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253639	4/4/2023	SJ Transportation	266240	Frac Tank	TV-217	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,981	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2058	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427138	4/4/2023	Kuhnle Brothers	266240	Frac Tank	1195	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2059	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427242	4/4/2023	Quality Carriers	266240	Frac Tank	CH7922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2060	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427141	4/4/2023	Kuhnle Brothers	521B	Frac Tank	731	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2061	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427312	4/4/2023	Heniff Transportation	AL4754	Frac Tank	41-3018	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2062	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427069	4/4/2023	Kuhnle Brothers	AL4754	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,976	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2063	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427263	4/4/2023	Kuhnle Brothers	251091 & 251079	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2064	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427265	4/4/2023	Kuhnle Brothers	251079	Frac Tank	550/872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2065	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427264	4/4/2023	Kuhnle Brothers	AL4754	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2066	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427267	4/4/2023	Kuhnle Brothers	251079	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2067	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427282	4/4/2023	Kuhnle Brothers	AL4755	Frac Tank	871	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2068	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427112	4/4/2023	Heniff Transportation	AL4755	Frac Tank	70191	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,018	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2069	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384885	4/4/2023	Kuhnle Brothers	AL4755	Frac Tank	1264	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,957	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2070	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427229	4/4/2023	Heniff Transportation	251079 & 257400	Frac Tank	11-1323	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2071	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427325	4/4/2023	Heniff Transportation	521B	Frac Tank	CC70124	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,151	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2072	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427326	4/4/2023	Heniff Transportation	521B	Frac Tank	1614	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,126	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2073	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427244	4/5/2023	Quality Carriers	251091	Frac Tank	W7583	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,113	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2074	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427311	4/5/2023	Heniff Transportation	2510191	Frac Tank	2995	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,050	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2075	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427396	4/5/2023	Quality Carriers	AL4771	Frac Tank	702027	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2076	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383219	4/5/2023	Altom Transport	AL4771	Frac Tank	T21467	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,026	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2077	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427397	4/5/2023	Quality Carriers	532A	Frac Tank	703406	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,982	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2078	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025383218	4/5/2023	Altom Transport	532A	Frac Tank	T21551	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2079	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427398	4/5/2023	Quality Carriers	251683	Frac Tank	704003	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2080	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427400	4/5/2023	Quality Carriers	532A	Frac Tank	70287	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2081	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427269	4/5/2023	Kuhnle Brothers	532A & 251026	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,926	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2082	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427268	4/5/2023	Kuhnle Brothers	251633	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2083	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427270	4/5/2023	Kuhnle Brothers	251633	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2084	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427271	4/5/2023	Kuhnle Brothers	501C/50 2D	Frac Tank	872/550	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2085	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427272	4/5/2023	Kuhnle Brothers	251633	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2086	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427274	4/5/2023	Kuhnle Brothers	256094	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2087	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427275	4/5/2023	Kuhnle Brothers	501C	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,028	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2088	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427283	4/5/2023	Kuhnle Brothers	265276 & 256094	Frac Tank	677	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2089	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427148	4/5/2023	Kuhnle Brothers	251633 & 256094	Frac Tank	922	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,783	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2090	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384883	4/5/2023	Kuhnle Brothers	AL4754	Frac Tank	1216	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,973	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2091	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427140	4/5/2023	Kuhnle Brothers	521B	Frac Tank	871	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2092	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427149	4/5/2023	Kuhnle Brothers	AL4754	Frac Tank	817	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,954	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2093	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427006	4/5/2023	Kuhnle Brothers	501C	Frac Tank	649	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,029	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2094	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427021	4/5/2023	Kuhnle Brothers	539C	Frac Tank	1214	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,065	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2095	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384869	4/5/2023	Kuhnle Brothers	521B & AL4754	Frac Tank	1213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2096	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427375	4/5/2023	Quality Carriers	AL4755	Frac Tank	703489	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2097	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427376	4/5/2023	Quality Carriers	AL4755	Frac Tank	702404	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2098	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427233	4/5/2023	Quality Carriers	502D & 539C	Frac Tank	702534	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2099	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427402	4/5/2023	Quality Carriers	265276	Frac Tank	703291	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2100	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427401	4/5/2023	Quality Carriers	AL4754	Frac Tank	67819	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2101	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427245	4/5/2023	Quality Carriers	260119/257728	Frac Tank	NK704	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2102	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427246	4/5/2023	Quality Carriers	538A/501C	Frac Tank	701580	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2103	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427247	4/5/2023	Quality Carriers	502D	Frac Tank	702445	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2104	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427248	4/5/2023	Quality Carriers	502D	Frac Tank	701637	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2105	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427309	4/5/2023	Heniff Transportation	AL4755	Frac Tank	11-711	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,916	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2106	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427310	4/5/2023	Heniff Transportation	256094	Frac Tank	11-1276	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2107	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427103	4/5/2023	Heniff Transportation	539C	Frac Tank	21-213	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,021	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2108	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427293	4/5/2023	Heniff Transportation	265276	Frac Tank	CC7025	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,988	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2109	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427294	4/5/2023	Heniff Transportation	521B	Frac Tank	21-3696	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2110	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253974	4/5/2023	SJ Transportation	501C	Frac Tank	TV-290	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2111	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	0252427226	4/5/2023	Heniff Transportation	560F	Frac Tank	1117	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,161	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2112	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427222	4/5/2023	Heniff Transportation	560F	Frac Tank	11-1272	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,091	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2113	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427327	4/5/2023	Heniff Transportation	559F	Frac Tank	43253	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,124	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2114	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427378	4/5/2023	Quality Carriers	559F	Frac Tank	702354	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2115	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427377	4/5/2023	Quality Carriers	539C	Frac Tank	702840	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,042	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2116	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427250	4/5/2023	Quality Carriers	560F	Frac Tank	702462	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,144	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2117	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427254	4/6/2023	Quality Carriers	559F	Frac Tank	LT-1890	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2118	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427259	4/6/2023	Altom Transport	505E/251766	Frac Tank	T21481	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2119	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427329	4/6/2023	Heniff Transportation	505E	Frac Tank	21-3863	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2120	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427277	4/6/2023	Kuhnle Brothers	251871	Frac Tank	550/872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,997	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2121	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427278	4/6/2023	Kuhnle Brothers	2518	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2122	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427279	4/6/2023	Kuhnle Brothers	251782	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2123	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427280	4/6/2023	Kuhnle Brothers	501F & 257400	Frac Tank	768	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2124	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469502	4/6/2023	Heritage Transport	256104	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2125	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427256	4/6/2023	Altom Transport	251782	Frac Tank	T21510	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2126	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427255	4/6/2023	Altom Transport	513A	Frac Tank	T21302	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2127	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427073	4/6/2023	Robbie D Wood	501F	Frac Tank	LT-2225	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2128	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427074	4/6/2023	Robbie D Wood	257761	Frac Tank	7740	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2129	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253642	4/6/2023	SJ Transportation	251321	Frac Tank	TV-234	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2130	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253635	4/6/2023	SJ Transportation	AL4738	Frac Tank	TV235	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2131	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427276	4/6/2023	Kuhnle Brothers	255950/257019	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,040	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2132	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427412	4/6/2023	Quality Carriers	257728	Frac Tank	CH7820	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2133	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427411	4/6/2023	Quality Carriers	257728/538B	Frac Tank	SK808	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2134	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469501	4/6/2023	Heritage Transport	256104	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2135	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253975	4/6/2023	SJ Transportation	538B	Frac Tank	TV-220	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2136	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469510	4/6/2023	Heritage Transport	256104	Frac Tank	6730	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2137	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469529	4/6/2023	Kuhnle Brothers	538B/566E	Frac Tank	769	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,003	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2138	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427210	4/6/2023	Quality Carriers	255950	Frac Tank	701919	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2139	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469531	4/6/2023	Kuhnle Brothers	566E/577D	Frac Tank	1194	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2140	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427281	4/6/2023	Kuhnle Brothers	577D	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,027	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2141	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469528	4/6/2023	Kuhnle Brothers	538B	Frac Tank	768	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2142	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469532	4/6/2023	Kuhnle Brothers	255950	Frac Tank	633	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,023	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2143	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427234	4/6/2023	Quality Carriers	257400	Frac Tank	703505	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2144	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427235	4/6/2023	Quality Carriers	257400	Frac Tank	N6701	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,029	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2145	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427237	4/6/2023	Quality Carriers	251478 & 251321	Frac Tank	651036	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,007	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2146	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427379	4/6/2023	Quality Carriers	251782	Frac Tank	SL075	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2147	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427395	4/6/2023	Quality Carriers	501F	Frac Tank	702174	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2148	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427443	4/6/2023	Quality Carriers	AL4771	Frac Tank	LA7048	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2149	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427444	4/6/2023	Quality Carriers	251683	Frac Tank	70260	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,695	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2150	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469549	4/6/2023	Quality Carriers	AL4738	Frac Tank	701968	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,977	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2151	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469550	4/6/2023	Quality Carriers	513A	Frac Tank	70712	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,007	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2152	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469551	4/6/2023	Quality Carriers	251478	Frac Tank	703091	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2153	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469552	4/6/2023	Quality Carriers	251478	Frac Tank	702792	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2154	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469553	4/6/2023	Quality Carriers	266384	Frac Tank	702073	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2155	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469554	4/6/2023	Quality Carriers	251688	Frac Tank	702957	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,008	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2156	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469555	4/6/2023	Quality Carriers	257761	Frac Tank	701803	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,904	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2157	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469556	4/6/2023	Quality Carriers	257761	Frac Tank	67806	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2158	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469557	4/6/2023	Quality Carriers	252007	Frac Tank	70192	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2159	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469558	4/6/2023	Quality Carriers	252007	Frac Tank	703174	Texas Molecular	2525 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2160	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	02546930	4/6/2023	Kuhnle Brothers	566E	Frac Tank	633	Texas Molecular	2526 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,023	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2161	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384997	4/6/2023	Kuhnle Brothers	501F	Frac Tank	1121	Texas Molecular	2527 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,822	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2162	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384979	4/6/2023	Kuhnle Brothers	251079	Frac Tank	872	Texas Molecular	2528 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2163	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427005	4/6/2023	Kuhnle Brothers	266384	Frac Tank	1221	Texas Molecular	2529 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2164	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427004	4/6/2023	Kuhnle Brothers	266384 & 513A	Frac Tank	497	Texas Molecular	2530 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2165	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384996	4/6/2023	Kuhnle Brothers	252651	Frac Tank	911	Texas Molecular	2531 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,943	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2166	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469516	4/6/2023	Kuhnle Brothers	251079 & 251478	Frac Tank	1121	Texas Molecular	2532 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2167	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469517	4/6/2023	Kuhnle Brothers	251478 & 257400 & 251079	Frac Tank	542	Texas Molecular	2533 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2168	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	02546918	4/6/2023	Kuhnle Brothers	257400	Frac Tank	926	Texas Molecular	2533 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2169	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384998	4/6/2023	Kuhnle Brothers	251079	Frac Tank	677	Texas Molecular	2534 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2170	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469649	4/6/2023	Kuhnle Brothers	566E	Frac Tank	896	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2171	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469628	4/6/2023	Heniff Transportation	266384	Frac Tank	00598	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,715	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2172	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469630	4/6/2023	Heniff Transportation	251688	Frac Tank	43246	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,949	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2173	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427308	4/6/2023	Heniff Transportation	AL4738	Frac Tank	11935	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2174	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427295	4/6/2023	Heniff Transportation	251683	Frac Tank	41-3205	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2175	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427296	4/6/2023	Heniff Transportation	251321	Frac Tank	11-1242	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,994	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2176	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469629	4/6/2023	Heniff Transportation	251079	Frac Tank	21-1955	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2177	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469598	4/6/2023	Heniff Transportation	255950	Frac Tank	ML01	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,041	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2178	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427331	4/6/2023	Heniff Transportation	257728	Frac Tank	4719	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,968	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2179	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427403	4/6/2023	Quality Carriers	558E	Frac Tank	65190	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,049	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2180	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427404	4/6/2023	Quality Carriers	558E/59 OD	Frac Tank	CH8021	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2181	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427405	4/6/2023	Quality Carriers	590D	Frac Tank	702755	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2182	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427406	4/6/2023	Quality Carriers	590D/55 9D	Frac Tank	703098	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2183	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427407	4/6/2023	Quality Carriers	559D	Frac Tank	702606	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2184	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427409	4/6/2023	Quality Carriers	512C	Frac Tank	703497	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,154	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2185	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427313	4/6/2023	Heniff Transportation	512C	Frac Tank	7087	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,151	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2186	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469685	4/6/2023	Altom Transport	558E	Frac Tank	T21275	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2187	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469533	4/6/2023	Kuhnle Brothers	512C	Frac Tank	1121	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,944	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2188	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469534	4/6/2023	Kuhnle Brothers	251766	Frac Tank	1194	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2189	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469535	4/6/2023	Kuhnle Brothers	251766	Frac Tank	1221	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,800	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2190	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469536	4/6/2023	Kuhnle Brothers	559D	Frac Tank	1221	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,950	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2191	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427273	4/6/2023	Kuhnle Brothers	251766	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,873	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2192	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469547	4/6/2023	Kuhnle Brothers	538B	Frac Tank	1215	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2193	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427284	4/7/2023	Kuhnle Brothers	574B	Frac Tank	769	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,009	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2194	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427285	4/7/2023	Kuhnle Brothers	251060/574D	Frac Tank	1215	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,000	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2195	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427287	4/7/2023	Kuhnle Brothers	AL5484	Frac Tank	542	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,976	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2196	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427288	4/7/2023	Kuhnle Brothers	516F	Frac Tank	926	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,044	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2197	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427289	4/7/2023	Kuhnle Brothers	514E/51 6F	Frac Tank	872	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	5,065	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2198	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	OH895850	025427290	4/7/2023	Kuhnle Brothers	514E	Frac Tank	497	Vickery Environmental	3958 State Route 412 Vickery, OH 43464	OHD020273819	In Transit	4,982	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2199	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469511	4/7/2023	SJ Transportation	257204	Frac Tank	TV-214	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2200	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469512	4/7/2023	SJ Transportation	257204	Frac Tank	TV-215	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,984	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2201	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469686	4/7/2023	Altom Transport	574B & 531A	Frac Tank	T21231	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,983	pending	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2202	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469687	4/7/2023	Altom Transport	257204	Frac Tank	T21621	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2203	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253985	4/7/2023	Robbie D Wood	555D	Frac Tank	SIRV15	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,012	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2204	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427072	4/7/2023	Robbie D Wood	253085	Frac Tank	LT-2237	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,025	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2205	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427080	4/7/2023	Robbie D Wood	593D	Frac Tank	SIRV1C2	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2206	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025253984	4/7/2023	Robbie D Wood	552B/514E	Frac Tank	LT2286	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2207	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427307	4/7/2023	Heniff Transportation	514E	Frac Tank	CC70168	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,023	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2208	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427314	4/7/2023	Heniff Transportation	251014	Frac Tank	2271	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2209	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427315	4/7/2023	Heniff Transportation	257019	Frac Tank	00522	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,995	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2210	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427316	4/7/2023	Heniff Transportation	251014/257019	Frac Tank	11-1162	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2211	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384570	4/7/2023	Heritage Transport	256104	Frac Tank	6730	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2212	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469599	4/7/2023	Heniff Transportation	256043	Frac Tank	1858	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,014	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2213	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469600	4/7/2023	Heniff Transportation	536E	Frac Tank	11-1253	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,155	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2214	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469601	4/7/2023	Heniff Transportation	536E	Frac Tank	41-3663	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2215	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469602	4/7/2023	Heniff Transportation	531A	Frac Tank	1093	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,962	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2216	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469646	4/7/2023	Heniff Transportation	507F	Frac Tank	2732	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2217	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469647	4/7/2023	Heniff Transportation	AL5886	Frac Tank	DM-52	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,039	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2218	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469715	4/7/2023	Heniff Transportation	AL5484	Frac Tank	11-1254	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2219	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469716	4/7/2023	Heniff Transportation	AL4787	Frac Tank	41-3212	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,971	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2220	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427381	4/7/2023	Quality Carriers	555D	Frac Tank	702431	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,027	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2221	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427382	4/7/2023	Quality Carriers	555D	Frac Tank	702711	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2222	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427387	4/7/2023	Quality Carriers	260119	Frac Tank	70837	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,020	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2223	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427388	4/7/2023	Quality Carriers	251014	Frac Tank	703011	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2224	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427389	4/7/2023	Quality Carriers	257019	Frac Tank	702944	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2225	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427408	4/7/2023	Quality Carriers	559D/536E	Frac Tank	703501	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,147	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2226	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427394	4/7/2023	Quality Carriers	552B	Frac Tank	11343	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2227	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469559	4/7/2023	Quality Carriers	256043	Frac Tank	702952	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2228	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469823	4/7/2023	Quality Carriers	AL5484	Frac Tank	702102	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,916	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2229	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469821	4/7/2023	Quality Carriers	AL4710	Frac Tank	703161	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2230	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469819	4/7/2023	Quality Carriers	AL4710	Frac Tank	702884	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2231	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469817	4/7/2023	Quality Carriers	AL4710	Frac Tank	702753	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2232	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469815	4/7/2023	Quality Carriers	AL4787	Frac Tank	703320	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,019	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2233	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427393	4/7/2023	Quality Carriers	253085	Frac Tank	LT204	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,030	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2234	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427415	4/7/2023	Quality Carriers	AL5886/507F	Frac Tank	700507	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,028	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2235	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427413	4/7/2023	Quality Carriers	507F/572A	Frac Tank	MT7017	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,016	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2236	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427390	4/7/2023	Quality Carriers	572A	Frac Tank	701669	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,034	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2237	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427414	4/7/2023	Quality Carriers	572A	Frac Tank	702699	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2238	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427391	4/7/2023	Quality Carriers	572A	Frac Tank	703014	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,559	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2239	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427392	4/7/2023	Quality Carriers	593D	Frac Tank	702611	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2240	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469543	4/7/2023	Kuhnle Brothers	257019	Frac Tank	633	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	3,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2241	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469650	4/7/2023	Kuhnle Brothers	260119/251014	Frac Tank	1197	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,048	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2242	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469651	4/7/2023	Kuhnle Brothers	260119	Frac Tank	1209	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,005	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2243	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469546	4/7/2023	Kuhnle Brothers	555D/260119	Frac Tank	1121	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,004	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2244	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427286	4/7/2023	Kuhnle Brothers	577D/555D	Frac Tank	768	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,022	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2245	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469523	4/7/2023	Kuhnle Brothers	516F/577D	Frac Tank	1194	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,069	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2246	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469652	4/7/2023	Kuhnle Brothers	516F	Frac Tank	1121	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,009	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2247	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469537	4/7/2023	Kuhnle Brothers	536E/552B	Frac Tank	1221	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2248	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469538	4/7/2023	Kuhnle Brothers	552B	Frac Tank	1221	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,950	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2249	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427139	4/7/2023	Kuhnle Brothers	253085	Frac Tank	787	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,978	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2250	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469519	4/7/2023	Kuhnle Brothers	256043	Frac Tank	1121	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	2,952	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2251	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469522	4/7/2023	Kuhnle Brothers	531A/AL4735	Frac Tank	911	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,943	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2252	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427142	4/7/2023	Kuhnle Brothers	531A	Frac Tank	895	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2253	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469526	4/7/2023	Kuhnle Brothers	574B	Frac Tank	911	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,993	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2254	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469525	4/7/2023	Kuhnle Brothers	574B	Frac Tank	497	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,013	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2255	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469521	4/7/2023	Kuhnle Brothers	257204/251060	Frac Tank	1194	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2256	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469520	4/7/2023	Kuhnle Brothers	251060	Frac Tank	633	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,003	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2257	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427147	4/7/2023	Kuhnle Brothers	251060	Frac Tank	520	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2258	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025384884	4/7/2023	Kuhnle Brothers	574D	Frac Tank	1212	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,000	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2259	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469541	4/7/2023	Kuhnle Brothers	507F	Frac Tank	633	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,023	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Container #	Container Type	Trailer ID Number	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Estimated Volume (Gal)	Disposal Facility Volume (Gal)	DOT Proper Shipping Name
2260	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427146	4/7/2023	Kuhnle Brothers	593D	Frac Tank	1194	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,010	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2261	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427416	4/7/2023	Quality Carriers	525F	Frac Tank	703030	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,039	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2262	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025427417	4/7/2023	Quality Carriers	525F	Frac Tank	702539	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,150	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2263	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469717	4/7/2023	Heniff Transportation	552B/525F	Frac Tank	0070137	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	4,839	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2264	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469718	4/7/2023	Heniff Transportation	525F	Frac Tank	11-1094	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,053	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3
2265	Water impacted with vinyl chloride - U043, Listed Hazardous Waste	U043	13230231	025469719	4/7/2023	Heniff Transportation	253326	Frac Tank	6116	Texas Molecular	2537 Independence Rd Deer Park, TX 77536	TXD000719518	In Transit	5,094	<i>pending</i>	NA3082, Hazardous waste, liquid, n.o.s., (vinyl chloride, water), 9, PG3

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
1	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	019181760	2/23/2023	US Bulk Transport	1203A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
2	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240944	2/23/2023	US Bulk Transport	1286A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
3	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240943	2/23/2023	US Bulk Transport	1278A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	26	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
4	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025250940	2/23/2023	US Bulk Transport	155-2A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
5	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240942	2/23/2023	US Bulk Transport	155A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
6	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240941	2/23/2023	US Bulk Transport	168A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
7	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240939	2/24/2023	US Bulk Transport	137A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
8	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240936	2/24/2023	US Bulk Transport	114A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
9	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240937	2/24/2023	US Bulk Transport	176B	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
10	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240938	2/24/2023	US Bulk Transport	185A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
11	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240934	2/24/2023	US Bulk Transport	152A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
12	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240935	2/24/2023	US Bulk Transport	106A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
13	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240933	2/24/2023	US Bulk Transport	190B	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
14	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240932	2/24/2023	US Bulk Transport	1268A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
15	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240931	2/24/2023	US Bulk Transport	1276A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	Received	22	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
16	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240929	2/24/2023	US Bulk Transport	1278A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	In Transit	22		NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
17	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240930	2/24/2023	US Bulk Transport	1286A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	In Transit	22		NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
18	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240928	2/24/2023	US Bulk Transport	1203A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	In Transit	22		NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
19	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240925	2/24/2023	US Bulk Transport	155-2A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	In Transit	22		NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
20	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	B23-8313-WDI	025240927	2/24/2023	US Bulk Transport	155A	Dump truck	US Ecology	49350 North I94 Service Drive Belleville, MI 48111	MID048090633	In Transit	22		NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
21	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316059	2/27/2023	Heritage Transport	HESU49319	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	19	19	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
22	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316062	2/27/2023	Heritage Transport	HESU49413	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	25	19	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
23	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316061	2/27/2023	Heritage Transport	HESU48490	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
24	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316060	2/27/2023	Heritage Transport	MJVU08520	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
25	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	025252120	2/28/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	25	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
26	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	0252252121	2/28/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
27	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316063	2/28/2023	Heritage Transport	HESU 49405	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	20	19	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
28	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316064	2/28/2023	Heritage Transport	HESU 48346	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	20	20	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
29	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316065	2/28/2023	Heritage Transport	HESU 49576	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	20	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
30	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316066	2/28/2023	Heritage Transport	HESU 49331	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	20	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
31	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316067	2/28/2023	Heritage Transport	HESU 49340	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
32	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316068	2/28/2023	Heritage Transport	MJVU 10912	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
33	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316069	2/28/2023	Heritage Transport	HESU 49413	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
34	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316070	2/28/2023	Heritage Transport	HESU 49583	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
35	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316114	2/28/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
36	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316115	2/28/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
37	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316113	2/28/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
38	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316071	3/1/2023	Heritage Transport	MJVU 10933	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
39	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316072	3/1/2023	Heritage Transport	MJVU 03650	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
40	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	025252122	3/1/2023	US Bulk Transport	193-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
41	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	025252123	3/1/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
42	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	025252261	3/1/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
43	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	025252258	3/1/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
44	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	025252259	3/1/2023	US Bulk Transport	1203A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	18	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
45	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316116	3/1/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
46	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316117	3/1/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
47	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316119	3/1/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
48	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	025252260	3/1/2023	US Bulk Transport	126A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
49	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	025252262	3/1/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
50	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316120	3/1/2023	US Bulk Transport	1262-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	25	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
51	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316073	3/1/2023	Heritage Transport	HESU 49470	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
52	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316074	3/1/2023	Heritage Transport	ESDU 0095	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
53	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316121	3/1/2023	US Bulk Transport	509A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
54	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316122	3/1/2023	US Bulk Transport	1210A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
55	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316123	3/1/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
56	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316124	3/1/2023	US Bulk Transport	1282A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
57	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316125	3/1/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
58	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316075	3/1/2023	Heritage Transport	HESU 49331	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	21	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
59	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316076	3/1/2023	Heritage Transport	HESU 48336	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	20	20	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
60	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316126	3/1/2023	US Bulk Transport	90907	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
61	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316127	3/1/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
62	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316128	3/1/2023	US Bulk Transport	144A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
63	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886697	3/1/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
64	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316077	3/1/2023	Heritage Transport	ESDU 0090	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
65	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886696	3/1/2023	US Bulk Transport	146A	Intermodal	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
66	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316078	3/1/2023	Heritage Transport	HESU 48489	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	19	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
67	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316129	3/1/2023	US Bulk Transport	1260A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
68	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316079	3/2/2023	Heritage Transport	HESU 49461	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
69	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316080	3/2/2023	Heritage Transport	HESU 48617	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
70	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316081	3/2/2023	Heritage Transport	HESU 48390	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
71	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886695	3/2/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
72	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316082	3/2/2023	Heritage Transport	ESDU 0093	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
73	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316083	3/2/2023	Heritage Transport	HESU 49464	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
74	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316084	3/2/2023	Heritage Transport	MJVU 8495	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
75	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886694	3/2/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
76	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316085	3/2/2023	Heritage Transport	HESU 49408	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
77	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316086	3/2/2023	Heritage Transport	HESU 48474	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
78	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316138	3/3/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
79	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316087	3/3/2023	Heritage Transport	HESU 49318	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
80	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316139	3/3/2023	US Bulk Transport	174F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
81	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316140	3/3/2023	US Bulk Transport	126A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	26	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
82	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316088	3/3/2023	Heritage Transport	HESU 48497	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
83	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316130	3/3/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
84	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316131	3/3/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
85	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316132	3/3/2023	US Bulk Transport	536A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	20	19	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
86	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316133	3/3/2023	US Bulk Transport	1210A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	25	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
87	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316134	3/3/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	25	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
88	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886693	3/3/2023	US Bulk Transport	1217A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
89	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316135	3/3/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	26	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
90	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316136	3/3/2023	US Bulk Transport	144A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	24	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
91	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316141	3/3/2023	US Bulk Transport	T01	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
92	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316137	3/3/2023	Beelman Truck Co.	219	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	26	26	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
93	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316089	3/3/2023	Heritage Transport	MJVU 95302	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
94	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316090	3/3/2023	Heritage Transport	HESU 49454	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	23	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
95	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316142	3/3/2023	US Bulk Transport	1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	Received	21	21	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
96	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886692	3/3/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	24	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
97	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886691	3/3/2023	US Bulk Transport	1257A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	23	24	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
98	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316091	3/3/2023	Heritage Transport	HESU 49635	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	20	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
99	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316092	3/3/2023	Heritage Transport	HESU 48373	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	23	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
100	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886690	3/3/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	Received	25	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
101	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316093	3/4/2023	Heritage Transport	MJVU 08520	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	25	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
102	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316094	3/4/2023	Heritage Transport	ESDU 0074	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	25	25	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
103	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316095	3/4/2023	Heritage Transport	MJVU 30163	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	22	22	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
104	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316096	3/4/2023	Heritage Transport	HESU 49674	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	Received	21	21	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
105	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886689	3/6/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
106	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886688	3/6/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
107	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316097	3/6/2023	Heritage Transport	HESU 48522	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
108	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316098	3/6/2023	Heritage Transport	HESU 49432	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
109	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316099	3/6/2023	Heritage Transport	HESU 48381	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
110	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316100	3/6/2023	Heritage Transport	MJVU 01886	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
111	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316101	3/6/2023	Heritage Transport	HESU 49420	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
112	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316102	3/6/2023	Heritage Transport	HESU 49312	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
113	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316103	3/6/2023	Heritage Transport	HESU 48160	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
114	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316104	3/6/2023	Heritage Transport	HESU 49483	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
115	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886687	3/6/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
116	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886686	3/6/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
117	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886685	3/7/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
118	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316105	3/7/2023	Heritage Transport	HESU 49350	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
119	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316106	3/7/2023	Heritage Transport	HESU 48370	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
120	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316107	3/7/2023	Heritage Transport	HESU 49345	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
121	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001316108	3/7/2023	Heritage Transport	HESU 48342	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
122	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001292811	3/7/2023	Heritage Transport	HESU 49311	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
123	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001292810	3/7/2023	Heritage Transport	HESU 49438	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
124	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001292809	3/7/2023	Heritage Transport	HESU 48516	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
125	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001292808	3/7/2023	Heritage Transport	HESU 48181	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
126	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886684	3/8/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
127	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886683	3/9/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
128	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886682	3/9/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
129	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886681	3/9/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
130	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886680	3/9/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
131	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886679	3/10/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
132	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886678	3/10/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
133	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886677	3/10/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
134	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886676	3/10/2023	US Bulk Transport	129B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
135	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292816	3/13/2023	US Bulk Transport	124A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
136	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292918	3/13/2023	Page Transport	3234	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
137	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	25383271	3/13/2023	Page Transport	59315	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
138	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	25383272	3/13/2023	Page Transport	4156	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
139	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886674	3/13/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
140	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886675	3/13/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
141	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886672	3/14/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
142	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886673	3/14/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
143	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292817	3/14/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
144	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292818	3/14/2023	US Bulk Transport	197A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
145	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292819	3/14/2023	US Bulk Transport	119A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
146	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292820	3/14/2023	US Bulk Transport	171-1B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
147	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292821	3/14/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
148	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292822	3/14/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
149	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292823	3/14/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
150	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292824	3/14/2023	US Bulk Transport	156A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
151	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292825	3/14/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
152	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292926	3/14/2023	US Bulk Transport	192-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
153	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292927	3/14/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
154	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292928	3/14/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
155	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292929	3/14/2023	US Bulk Transport	130A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
156	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292930	3/14/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
157	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292931	3/14/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
158	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292932	3/14/2023	US Bulk Transport	146A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
159	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292933	3/14/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
160	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292934	3/14/2023	US Bulk Transport	190-B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
161	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292835	3/14/2023	US Bulk Transport	T01	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
162	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292936	3/14/2023	US Bulk Transport	111A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
163	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292937	3/14/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
164	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292938	3/14/2023	US Bulk Transport	106A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
165	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	154632	024886671	3/15/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
166	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	154632	024886670	3/15/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
167	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325020	3/15/2023	Beelman Truck Co.	219	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
168	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325019	3/15/2023	Beelman Truck Co.	G763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
169	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292839	3/15/2023	US Bulk Transport	346A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
170	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292840	3/15/2023	US Bulk Transport	312A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
171	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292841	3/15/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
172	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292842	3/15/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
173	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292843	3/15/2023	US Bulk Transport	174-C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
174	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325021	3/15/2023	Beelman Truck Co.	G937	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
175	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292844	3/15/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
176	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292845	3/15/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
177	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325022	3/15/2023	Beelman Truck Co.	G15	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
178	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292846	3/15/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
179	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292847	3/15/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
180	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292848	3/15/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
181	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292849	3/15/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
182	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292850	3/15/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
183	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292851	3/15/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
184	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292852	3/15/2023	US Bulk Transport	10122A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
185	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292853	3/15/2023	US Bulk Transport	3001010	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
186	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292854	3/15/2023	US Bulk Transport	1010A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
187	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292855	3/15/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
188	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292856	3/15/2023	US Bulk Transport	150A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
189	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292857	3/15/2023	US Bulk Transport	90932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
190	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292858	3/15/2023	US Bulk Transport	397A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
191	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292920	3/15/2023	Page Transport	59315	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
192	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292921	3/15/2023	Page Transport	59321	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
193	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292922	3/15/2023	Page Transport	079916	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
194	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292859	3/15/2023	US Bulk Transport	1268A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
195	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292860	3/15/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
196	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292923	3/15/2023	Page Transport	74174	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
197	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292924	3/15/2023	Page Transport	97713	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
198	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292925	3/15/2023	Page Transport	L38219	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
199	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	154632	024886669	3/16/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
200	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	154632	024886668	3/16/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
201	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292861	3/16/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
202	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292862	3/16/2023	US Bulk Transport	197A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
203	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292863	3/16/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
204	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292864	3/16/2023	US Bulk Transport	1251	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
205	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292865	3/16/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
206	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292866	3/16/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
207	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292867	3/16/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
208	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292868	3/16/2023	US Bulk Transport	119A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
209	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292869	3/16/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
210	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292870	3/16/2023	US Bulk Transport	171B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
211	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292871	3/16/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
212	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325023	3/16/2023	Beelman Truck Co.	G818	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
213	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292872	3/16/2023	US Bulk Transport	179-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
214	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292873	3/16/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
215	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292874	3/16/2023	US Bulk Transport	T01	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
216	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292875	3/16/2023	US Bulk Transport	130A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
217	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292876	3/16/2023	US Bulk Transport	22	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
218	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292877	3/16/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
219	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292878	3/16/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
220	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292879	3/16/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
221	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886667	3/16/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
222	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886666	3/16/2023	US Bulk Transport	106A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
223	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292880	3/16/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
224	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292881	3/16/2023	US Bulk Transport	1282A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
225	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292926	3/16/2023	Page Transport	3234	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
226	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292927	3/15/2023	Page Transport	50654	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
227	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292882	3/16/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
228	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324102	3/16/2023	Heritage Transport	HESU-48379	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
229	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292883	3/16/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
230	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292929	3/16/2023	Page Transport	7606	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
231	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292928	3/15/2023	Page Transport	402	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
232	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886665	3/16/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
233	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292884	3/16/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
234	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886664	3/17/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
235	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292885	3/17/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
236	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292886	3/17/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
237	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324103	3/17/2023	Heritage Transport	HESU-48449	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
238	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292887	3/17/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
239	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292888	3/17/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
240	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292889	3/17/2023	US Bulk Transport	397A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
241	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292930	3/17/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
242	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	00129231	3/17/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
243	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292890	3/17/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
244	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292891	3/17/2023	US Bulk Transport	174-C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
245	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292892	3/17/2023	US Bulk Transport	1084-B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
246	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292893	3/17/2023	US Bulk Transport	30010	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
247	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292894	3/17/2023	US Bulk Transport	10122A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
248	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292895	3/17/2023	US Bulk Transport	1010A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
249	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292896	3/17/2023	US Bulk Transport	1202A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
250	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292897	3/17/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
251	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886956	3/17/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
252	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324105	3/17/2023	Heritage Transport	MJVU-03596	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
253	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292898	3/17/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
254	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292899	3/17/2023	US Bulk Transport	1231A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
255	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292933	3/17/2023	Page Transport	59315	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
256	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292934	3/17/2023	Page Transport	59321	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
257	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324104	3/17/2023	Heritage Transport	HESU-49433	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
258	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292900	3/17/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
259	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292901	3/17/2023	US Bulk Transport	1253A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
260	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324106	3/17/2023	Heritage Transport	HESU-49431	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
261	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324107	3/18/2023	Heritage Transport	MJVU 15513	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
262	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324108	3/18/2023	Heritage Transport	MJVU10511	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
263	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324109	3/18/2023	Heritage Transport	HESU-15391	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
264	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324110	3/18/2023	Heritage Transport	MJVU 10933	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
265	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292906	3/19/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
266	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292905	3/19/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
267	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292904	3/19/2023	US Bulk Transport	119A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
268	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292903	3/19/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
269	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292902	3/19/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
270	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292908	3/19/2023	US Bulk Transport	138-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
271	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292907	3/19/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
272	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292909	3/19/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
273	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292910	3/19/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
274	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292911	3/19/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
275	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292935	3/19/2023	Page Transport	F43143	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
276	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292912	3/19/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
277	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292913	3/19/2023	US Bulk Transport	130A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
278	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292914	3/19/2023	US Bulk Transport	T01	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
279	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292915	3/19/2023	US Bulk Transport	1231A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
280	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324001	3/19/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
281	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292936	3/19/2023	Page Transport	3234	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	29	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
282	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292938	3/19/2023	Page Transport	079916	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
283	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322511	3/19/2023	US Bulk Transport	22	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
284	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322510	3/19/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
285	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292937	3/19/2023	Page Transport	7606	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
286	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322509	3/19/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
287	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324002	3/19/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
288	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292939	3/19/2023	Page Transport	38219	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
289	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322512	3/19/2023	US Bulk Transport	111A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
290	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886663	3/20/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
291	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886955	3/20/2023	US Bulk Transport	190B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
292	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322513	3/20/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
293	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322514	3/20/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
294	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322515	3/20/2023	US Bulk Transport	174-1C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
295	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324111	3/20/2023	Heritage Transport	HESU-49319	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
296	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324112	3/20/2023	Heritage Transport	MJVU-02603	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
297	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322516	3/20/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
298	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322517	3/20/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
299	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322518	3/20/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
300	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	1292932	3/20/2023	Page Transport	97713	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
301	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322519	3/20/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
302	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322520	3/20/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
303	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322521	3/20/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
304	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322522	3/20/2023	US Bulk Transport	397A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
305	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322523	3/20/2023	US Bulk Transport	192-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
306	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322524	3/20/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
307	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322525	3/20/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
308	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322526	3/20/2023	US Bulk Transport	10122A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
309	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322527	3/20/2023	US Bulk Transport	3001010	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
310	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322528	3/20/2023	US Bulk Transport	1010A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
311	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324113	3/20/2023	Heritage Transport	MJVU-03195	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
312	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322529	3/20/2023	US Bulk Transport	1253A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
313	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322530	3/20/2023	US Bulk Transport	156A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
314	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322531	3/20/2023	US Bulk Transport	1254A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
315	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324114	3/20/2023	Heritage Transport	HESU-48490	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
316	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322532	3/20/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
317	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322533	3/20/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
318	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292940	3/20/2023	Page Transport	467	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
319	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	003124115	3/20/2023	Heritage Transport	MJVU-03596	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
320	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322534	3/20/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
321	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322535	3/20/2023	US Bulk Transport	150A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
322	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292941	3/20/2023	Page Transport	255001	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
323	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322536	3/20/2023	US Bulk Transport	90932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
324	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324116	3/20/2023	Heritage Transport	MJVU10912	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
325	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322537	3/20/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
326	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886954	3/20/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
327	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322538	3/20/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
328	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322539	3/20/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
329	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324117	3/20/2023	Heritage Transport	HSESU49576	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
330	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292942	3/20/2023	Page Transport	3776	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
331	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886953	3/21/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
332	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322540	3/21/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
333	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322541	3/21/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
334	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324118	3/21/2023	Heritage Transport	HESU 49340	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
335	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324119	3/21/2023	Heritage Transport	MJVU 03650	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
336	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322543	3/21/2023	US Bulk Transport	119A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
337	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322544	3/21/2023	US Bulk Transport	333A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
338	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322542	3/21/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
339	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322545	3/21/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
340	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322546	3/21/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
341	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322547	3/21/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
342	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322548	3/21/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
343	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322549	3/21/2023	US Bulk Transport	1381A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
344	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322550	3/21/2023	US Bulk Transport	130A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
345	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322551	3/21/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
346	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322552	3/21/2023	US Bulk Transport	1231A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
347	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322553	3/21/2023	US Bulk Transport	T-01	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
348	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322554	3/21/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
349	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322555	3/21/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
350	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324120	3/21/2023	Heritage Transport	HESU 48346	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	19	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
351	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322556	3/21/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
352	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324121	3/21/2023	Heritage Transport	HESU 49413	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
353	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322557	3/21/2023	US Bulk Transport	111A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
354	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322558	3/21/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
355	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886952	3/21/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
356	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322559	3/21/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
357	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886951	3/22/2023	US Bulk Transport	146A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
358	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886949	3/22/2023	US Bulk Transport	190-B	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
359	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886948	3/23/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
360	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322560	3/23/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
360	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322561	3/23/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
362	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322562	3/23/2023	US Bulk Transport	119A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
361	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322563	3/23/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
364	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322564	3/23/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
362	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322565	3/23/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
366	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322566	3/23/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
367	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322567	3/23/2023	US Bulk Transport	138-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
368	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322568	3/23/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
369	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322569	3/23/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
370	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322570	3/23/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
371	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322571	3/23/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
372	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292943	3/23/2023	Page Transport	F43143	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
373	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322572	3/23/2023	US Bulk Transport	190-B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
374	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322573	3/23/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
375	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322574	3/23/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
376	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322911	3/23/2023	Beelman Truck Co.	443	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
377	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322575	3/23/2023	US Bulk Transport	90932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
378	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322576	3/23/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
379	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322577	3/23/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
380	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322578	3/23/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
381	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322579	3/23/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
382	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292944	3/23/2023	Page Transport	074174	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
383	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322917	3/23/2023	Beelman Truck Co.	190	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
384	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322912	3/23/2023	Beelman Truck Co.	G887	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
385	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322913	3/23/2023	Beelman Truck Co.	G895	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
386	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886947	3/23/2023	US Bulk Transport	1276A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
387	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322914	3/23/2023	Beelman Truck Co.	G955	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
388	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886946	3/23/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
389	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886945	3/24/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
390	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322581	3/24/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
391	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322582	3/24/2023	US Bulk Transport	397-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
392	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322583	3/24/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
393	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384951	3/24/2023	US Bulk Transport	348A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
394	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384950	3/24/2023	US Bulk Transport	383A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
395	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322584	3/24/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
396	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384949	3/24/2023	US Bulk Transport	1084B	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
397	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384948	3/24/2023	US Bulk Transport	1010C	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
398	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	154632	024886944	3/24/2023	US Bulk Transport	137A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
399	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384947	3/24/2023	US Bulk Transport	1010A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
400	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384946	3/24/2023	US Bulk Transport	10122A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
401	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292945	3/24/2023	Page Transport	7612	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
402	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886943	3/24/2023	US Bulk Transport	1217A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
403	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384945	3/24/2023	US Bulk Transport	106A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
404	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384944	3/24/2023	US Bulk Transport	1231A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
405	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886942	3/24/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
406	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384940	3/25/2023	US Bulk Transport	116A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
407	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322915	3/25/2023	Beelman Truck Co.	G818	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
408	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384941	3/25/2023	US Bulk Transport	150A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
409	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384943	3/25/2023	US Bulk Transport	105A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
410	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322585	3/26/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
411	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322586	3/26/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
412	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322587	3/26/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
413	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384939	3/26/2023	US Bulk Transport	119A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
414	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322588	3/26/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
415	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322589	3/26/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
416	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322590	3/26/2023	US Bulk Transport	190B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
417	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322591	3/26/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
418	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322592	3/26/2023	US Bulk Transport	171B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
419	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322593	3/26/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
420	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322594	3/26/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
421	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322595	3/26/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
422	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322596	3/26/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
423	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292946	3/26/2023	Page Transport	0476	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	28	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
424	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322597	3/26/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
425	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384938	3/26/2023	US Bulk Transport	109A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
426	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322598	3/26/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
427	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322599	3/26/2023	US Bulk Transport	333A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
428	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322600	3/26/2023	US Bulk Transport	197A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
429	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322601	3/26/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
430	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292947	3/26/2023	Page Transport	F43143	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
431	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322602	3/26/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
432	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322603	3/26/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
433	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	025384937	3/26/2023	US Bulk Transport	146A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
434	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	017906457	3/26/2023	US Bulk Transport	138A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
435	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	017906458	3/26/2023	US Bulk Transport	138-1A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
436	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292948	3/26/2023	Page Transport	5414	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
437	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292949	3/26/2023	Page Transport	059315	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
438	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292950	3/26/2023	Page Transport	074174	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
439	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322604	3/26/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
440	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292951	3/26/2023	Page Transport	3234	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
441	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322605	3/26/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
442	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322606	3/26/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
443	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322607	3/26/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
444	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322608	3/26/2023	US Bulk Transport	152A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
445	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322916	3/27/2023	Beelman Transport	G678	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
446	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322918	3/27/2023	Beelman Transport	G888	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
447	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322919	3/27/2023	Beelman Transport	G887	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
448	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322609	3/27/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
449	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322610	3/27/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
450	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322920	3/27/2023	Beelman Transport	G895	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
451	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322611	3/27/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
452	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322612	3/27/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
453	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292952	3/27/2023	Page Transport	97713	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
454	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322921	3/27/2023	Beelman Transport	G621	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
455	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322613	3/27/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
456	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322922	3/27/2023	Beelman Transport	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
457	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322614	3/27/2023	US Bulk Transport	22	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
458	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	24888055	3/27/2023	Ross Transportation	SB2608	Rolloff	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	16	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
459	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322923	3/27/2023	Beelman Transport	G763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
460	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322615	3/27/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
461	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322616	3/27/2023	US Bulk Transport	90932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
462	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292953	3/27/2023	Page Transport	7605	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
463	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322617	3/27/2023	US Bulk Transport	111A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
464	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886927	3/27/2023	Ross Transportation	SB1836	Rolloff	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	15	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
465	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886928	3/28/2023	US Bulk Transport	126A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
466	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886929	3/28/2023	US Bulk Transport	137A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
467	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322618	3/28/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
468	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322619	3/28/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
469	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322620	3/28/2023	US Bulk Transport	176B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
470	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322621	3/28/2023	US Bulk Transport	197A-1	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
471	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322622	3/28/2023	US Bulk Transport	179A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
472	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322623	3/28/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
473	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	017906455	3/28/2023	Basin Transportation	ED08	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
474	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292954	3/28/2023	Page Transport	7612	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
475	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	017906456	3/28/2023	Basin Transportation	ED07	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
476	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH256744-DR	017906454	3/28/2023	Basin Transportation	ED01	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
477	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322624	3/28/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
478	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322625	3/28/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
479	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322626	3/28/2023	US Bulk Transport	144A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
480	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322924	3/28/2023	Beelman Truck Company	G669	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
481	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322627	3/28/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
482	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322628	3/28/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
483	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322629	3/28/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
484	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322630	3/28/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
485	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322631	3/28/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
486	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322632	3/28/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
487	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322633	3/28/2023	US Bulk Transport	1260A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
488	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322634	3/28/2023	US Bulk Transport	152A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
489	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322635	3/28/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
490	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322636	3/28/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
491	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322637	3/28/2023	US Bulk Transport	171B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
492	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292955	3/28/2023	Page Transport	F43143	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
493	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322638	3/28/2023	US Bulk Transport	190B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
494	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292956	3/28/2023	Page Transport	074174	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
495	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322639	3/28/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
496	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292957	3/28/2023	Page Transport	5414	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
497	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292958	3/28/2023	Page Transport	79916	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
498	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322640	3/28/2023	US Bulk Transport	1210A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
499	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322641	3/28/2023	US Bulk Transport	567A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
500	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292959	3/28/2023	Page Transport	059315	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
501	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322642	3/28/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
502	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292960	3/28/2023	Page Transport	59321	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
503	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322643	3/28/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
504	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322925	3/28/2023	Beelman Truck Company	G932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
505	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322926	3/28/2023	Beelman Truck Co.	G861	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
506	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322927	3/29/2023	Beelman Truck Co.	G873	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
507	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322928	3/29/2023	Beelman Truck Co.	G689	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
508	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322644	3/29/2023	US Bulk Transport	174C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
509	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322645	3/29/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
510	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322646	3/29/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
511	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322647	3/29/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
512	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322929	3/29/2023	Beelman Truck Co.	190	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	28	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
513	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322648	3/29/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
514	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322649	3/29/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
515	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322930	3/29/2023	Beelman Truck Co.	443	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
516	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292961	3/29/2023	Page Transport	D7605	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
517	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292963	3/29/2023	Page Transport	7598	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
518	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322650	3/29/2023	US Bulk Transport	397-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
519	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322651	3/29/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
520	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322931	3/29/2023	Beelman Truck Company	623	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
521	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322932	3/29/2023	Beelman Truck Company	895	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
522	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322652	3/29/2023	US Bulk Transport	1202A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
523	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322933	3/29/2023	Beelman Truck Company	887	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
524	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888053	3/29/2023	Ross Transportation Services	SB2802	Rolloff	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
525	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322934	3/29/2023	Beelman Truck Company	G888	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	28	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
526	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322653	3/29/2023	US Bulk Transport	550A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
527	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322654	3/29/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
528	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322936	3/29/2023	Beelman Truck Company	621	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
529	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322655	3/29/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
530	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292964	3/29/2023	Page Transport	3234	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
531	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322656	3/29/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
532	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322935	3/29/2023	Beelman Truck Company	371	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
533	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322937	3/29/2023	Beelman Truck Co	763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
534	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322938	3/29/2023	Beelman Truck Co	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	28	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
535	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322657	3/29/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
536	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322658	3/29/2023	US Bulk Transport	1010C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
537	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322659	3/29/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
538	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322660	3/29/2023	US Bulk Transport	1010A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
539	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322661	3/29/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
540	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322662	3/29/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
541	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292965	3/29/2023	Page	077951	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
542	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292966	3/29/2023	Page	K40939	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
543	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322663	3/29/2023	US Bulk Transport	1254A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
544	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888052	3/29/2023	Ross Transportation Services	SB1260	Rolloff	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	15	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
545	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886930	3/30/2023	US Bulk	126A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
546	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886931	3/30/2023	US Bulk Transport	137A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
547	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322664	3/30/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
548	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322665	3/30/2023	US Bulk Transport	136A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
549	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322666	3/30/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
550	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322667	3/30/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
551	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322668	3/30/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
552	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292967	3/30/2023	Page	F43143	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
553	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292968	3/30/2023	Page	074174	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
554	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322939	3/30/2023	Beelman Truck Company	G669	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
555	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322669	3/30/2023	US Bulk Transport	190-B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
556	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322940	3/30/2023	Beelman Truck Company	G892	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
557	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322670	3/30/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
558	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322671	3/30/2023	US Bulk Transport	1282A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
559	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322672	3/30/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
560	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322941	3/30/2023	Beelman Truck Company	G818	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
561	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322942	3/30/2023	Beelman Truck Company	G932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
562	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322678	3/31/2023	Beelman Truck Co	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
563	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886932	3/31/2023	US Bulk Transport	126A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
564	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906452	3/31/2023	Basin Transportation	ED41	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
565	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322943	3/31/2023	Beelman Truck Company	G861	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
566	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888051	3/31/2023	Ross Transportation	SB1271	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
567	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322945	3/31/2023	Beelman Truck Company	G678	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
568	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906453	3/31/2023	Basin Transportation	ED22	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
569	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322674	3/31/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
570	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322675	3/31/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
571	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322944	3/31/2023	Beelman Truck Company	G883	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
572	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322676	3/31/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
573	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322677	3/31/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
574	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322946	3/31/2023	Beelman Truck Company	G763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
575	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322947	3/31/2023	Beelman Truck Company	G827	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
576	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322679	3/31/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
577	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322680	3/31/2023	US Bulk Transport	1010C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
578	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322681	3/31/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
579	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322682	3/31/2023	US Bulk Transport	1010A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
580	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322683	3/31/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
581	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322684	3/31/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
582	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322685	3/31/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
583	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322686	3/31/2023	US Bulk Transport	105A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
584	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322687	3/31/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
585	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322688	3/31/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
586	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886933	3/31/2023	US Bulk Transport	1253A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
587	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906451	3/31/2023	Basin Transportation	ED05	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
588	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888050	3/31/2023	Ross Transportation	SB1991	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	13	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
589	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292969	3/31/2023	Page	3234	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
590	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322689	3/31/2023	US Bulk Transport	1202A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
591	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322678	3/31/2023	Beelman Truck Company	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
592	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886934	3/31/2023	US Bulk Transport	137A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
593	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906450	3/31/2023	Basin Transportation	ED06	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
594	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886935	3/31/2023	US Bulk Transport	146A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
595	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906449	3/31/2023	Basin Transportation	ED31	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
596	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322673	3/31/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
597	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906448	4/1/2023	Basin Transportation	ED08	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
598	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322690	4/2/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
599	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906447	4/2/2023	Basin Transportation	ED07	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
600	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322691	4/2/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
601	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906459	4/2/2023	Basin Transportation	ED01	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
602	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322692	4/2/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
603	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322693	4/2/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
604	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322694	4/2/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
605	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322695	4/2/2023	US Bulk Transport	138-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
606	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322696	4/2/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
607	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322697	4/2/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
608	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322698	4/2/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
609	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322699	4/2/2023	US Bulk Transport	333A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
610	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292970	4/2/2023	Page	K490939	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
611	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322700	4/2/2023	US Bulk Transport	1262A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
612	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292971	4/2/2023	Page	F43143	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
613	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322701	4/2/2023	US Bulk Transport	156A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
614	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322702	4/2/2023	US Bulk Transport	322A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
615	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324003	4/2/2023	Heritage Transport	42-28	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
616	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324004	4/2/2023	Heritage Transport	42-24	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
617	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324005	4/2/2023	Heritage Transport	42-27	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
618	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322703	4/2/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
619	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322704	4/2/2023	US Bulk Transport	185A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
620	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322705	4/2/2023	US Bulk Transport	152A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
621	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322706	4/2/2023	US Bulk Transport	106A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
622	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322707	4/2/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
623	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322708	4/2/2023	US Bulk Transport	104B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
624	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322709	4/3/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
625	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322710	4/3/2023	US Bulk Transport	312A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
626	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322711	4/3/2023	US Bulk Transport	171B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
627	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322712	4/3/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
628	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322713	4/3/2023	US Bulk Transport	345-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
629	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322714	4/3/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
630	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322715	4/3/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
631	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322716	4/3/2023	US Bulk Transport	397A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
632	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322717	4/3/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
633	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292972	4/3/2023	Page	053804	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
634	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322718	4/3/2023	US Bulk Transport	1210A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
635	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322719	4/3/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
636	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322720	4/3/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
637	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322721	4/3/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
638	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322722	4/3/2023	US Bulk Transport	1276A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
639	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322723	4/3/2023	US Bulk Transport	DT1505	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
640	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322724	4/3/2023	US Bulk Transport	336A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
641	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292973	4/3/2023	Page	3234	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
642	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322725	4/3/2023	US Bulk Transport	1260A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
643	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292974	4/3/2023	Page	7612	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
644	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322726	4/3/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
645	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322727	4/3/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
646	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324006	4/3/2023	Heritage Transport	42-31	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
647	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322948	4/3/2023	Beelman	G34	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
648	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322728	4/3/2023	US Bulk Transport	105A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
649	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292975	4/3/2023	Page	074174	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
650	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322729	4/3/2023	US Bulk Transport	146A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
651	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324007	4/3/2023	Heritage Transport	42-23	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
652	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322730	4/3/2023	US Bulk Transport	1282-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
653	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292976	4/3/2023	Page	255001	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
654	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322731	4/3/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
655	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322732	4/3/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
656	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322733	4/3/2023	US Bulk Transport	DT1510	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
657	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322734	4/3/2023	US Bulk Transport	90932	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
658	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322735	4/3/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
659	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322949	4/3/2023	Beelman	G763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
660	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322950	4/3/2023	Beelman	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
661	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322951	4/3/2023	Beelman	G827	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
662	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322736	4/4/2023	US Bulk Transport	168A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
663	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322737	4/4/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
664	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322738	4/4/2023	US Bulk Transport	333A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
665	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322739	4/4/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
666	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322740	4/4/2023	US Bulk Transport	138-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
667	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322952	4/4/2023	Beelman Truck Co	G818	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
668	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322741	4/4/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
669	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322742	4/4/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
670	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322743	4/4/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
671	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322744	4/4/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
672	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322745	4/4/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
673	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292977	4/4/2023	Page	F43143	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
674	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322746	4/4/2023	US Bulk Transport	550A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
675	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322747	4/4/2023	US Bulk Transport	129B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
676	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322748	4/4/2023	US Bulk Transport	159A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
677	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292979	4/4/2023	Page	7607	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
678	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322749	4/4/2023	US Bulk Transport	144A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
679	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322750	4/4/2023	US Bulk Transport	177A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
680	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322751	4/4/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
681	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322752	4/4/2023	US Bulk Transport	3	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
682	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888125	4/4/2023	Ross Transportation	SB1372	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	18	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
683	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322753	4/4/2023	US Bulk Transport	22	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
684	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322953	4/4/2023	Beelman Truck Co	581	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
685	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322954	4/4/2023	Beelman Truck Co	599	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
686	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322754	4/4/2023	US Bulk Transport	345A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
687	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322755	4/4/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
688	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322756	4/4/2023	US Bulk Transport	1253A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
689	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292978	4/4/2023	Page	K40939	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
690	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324008	4/4/2023	Heritage Transport	42-24	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
691	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324009	4/4/2023	Heritage Transport	42-36	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
692	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324010	4/4/2023	Heritage Transport	42-25	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	14	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
693	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324011	4/4/2023	Heritage Transport	42-35	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
694	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324012	4/4/2023	Heritage Transport	42-30	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
695	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292980	4/4/2023	Page	059321	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
696	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292981	4/4/2023	Page	059315	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
697	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292982	4/4/2023	Page	077044	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
698	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322757	4/4/2023	US Bulk Transport	150A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
699	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906428	4/4/2023	US Bulk Transport	1549B	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
700	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324013	4/4/2023	Heritage Transport	42-27	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
701	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324014	4/4/2023	Heritage Transport	42-33	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
702	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322955	4/4/2023	Beelman Truck Co	G669	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
703	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292983	4/4/2023	Page	5885	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
704	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886936	4/5/2023	US Bulk Transport	126A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
705	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886937	4/5/2023	US Bulk Transport	137A	Dump Truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
706	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322787	4/5/2023	US Bulk Transport	163A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	19	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
707	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322788	4/5/2023	US Bulk Transport	312A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
708	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322789	4/5/2023	US Bulk Transport	345-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
709	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906464	4/5/2023	Basin Transportation	ED41	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
710	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322790	4/5/2023	US Bulk Transport	171-B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
711	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322791	4/5/2023	US Bulk Transport	1249A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
712	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322792	4/5/2023	US Bulk Transport	142-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
713	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292993	4/5/2023	Page E.T.C.	050654	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
714	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322982	4/5/2023	Beelman Truck Co	621	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
715	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322793	4/5/2023	US Bulk Transport	109A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
716	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324122	4/5/2023	Heritage Transport	HESU 49470	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
717	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324123	4/5/2023	Heritage Transport	HESU 48617	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
718	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906429	4/5/2023	US Bulk Transport	12	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
719	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322795	4/5/2023	US Bulk Transport	90930	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
720	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324046	4/5/2023	Heritage Transport	4229	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
721	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322776	4/5/2023	US Bulk Transport	DT1505	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
722	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322777	4/5/2023	US Bulk Transport	538A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
723	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322778	4/5/2023	US Bulk Transport	146A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
724	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322779	4/5/2023	US Bulk Transport	167A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
725	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324124	4/5/2023	Heritage Transport	HESU 48336	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
726	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324125	4/5/2023	Heritage Transport	HESU 49576	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
727	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292994	4/5/2023	Page E.T.C.	SB2413	Roll off	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	10	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
728	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322763	4/5/2023	US Bulk Transport	1282-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
729	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322762	4/5/2023	US Bulk Transport	383A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
730	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292992	4/5/2023	Page E.T.C.	7612	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
731	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322761	4/5/2023	US Bulk Transport	1084B	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
732	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292991	4/5/2023	Page E.T.C.	053804	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
733	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292990	4/5/2023	Page E.T.C.	07417	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
734	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322760	4/5/2023	US Bulk Transport	155-2A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
735	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322759	4/5/2023	US Bulk Transport	155A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
736	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906460	4/5/2023	Basin Transportation	ED05	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
737	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322983	4/5/2023	Beelman Truck Co	G827	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
738	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906430	4/5/2023	US Bulk Transport	116A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
739	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322973	4/5/2023	Beelman Truck Co	G763	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
740	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322972	4/5/2023	Beelman Truck Co	G848	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
741	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322971	4/5/2023	Beelman Truck Co	G883	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
742	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322768	4/5/2023	US Bulk Transport	1286A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
743	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427473	4/5/2023	Enviroserve	PONZ251147	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
744	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322764	4/5/2023	US Bulk Transport	90931	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
745	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322765	4/5/2023	US Bulk Transport	348A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
746	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322970	4/5/2023	Beelman Truck Co	G34	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
747	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322767	4/5/2023	US Bulk Transport	DT1510	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
748	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322766	4/5/2023	US Bulk Transport	336-A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
749	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427474	4/6/2023	Enviroserve	EPIU224803	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
750	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001292807	4/6/2023	Heritage Transport	HESU 48555	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
751	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324126	4/6/2023	Heritage Transport	HESU 48451	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
752	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324128	4/6/2023	Heritage Transport	HESU 49342	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
753	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322780	4/6/2023	US Bulk Transport	550A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
754	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888129	4/6/2023	Ross Transportation Services	DSB2600	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	17	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
755	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292995	4/6/2023	Page E.T.C.	077044	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
756	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322769	4/6/2023	US Bulk Transport	124A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
757	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906514	4/6/2023	Basin Transportation	ED07	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
758	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906515	4/6/2023	Basin Transportation	ED01	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	13	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
759	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322770	4/6/2023	US Bulk Transport	333A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
760	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322771	4/6/2023	US Bulk Transport	138A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
761	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322772	4/6/2023	US Bulk Transport	138-1A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
762	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322773	4/6/2023	US Bulk Transport	174-F	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
763	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322974	4/6/2023	Beelman Truck Co	G678	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
764	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322774	4/6/2023	US Bulk Transport	514A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
765	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322775	4/6/2023	US Bulk Transport	303A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
766	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316146	4/6/2023	US Bulk Transport	345A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
767	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906516	4/6/2023	Basin Transportation	ED22	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
768	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906517	4/6/2023	Basin Transportation	ED31	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
769	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322781	4/6/2023	US Bulk Transport	351A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
770	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322782	4/6/2023	US Bulk Transport	1239A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
771	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322783	4/6/2023	US Bulk Transport	1278A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
772	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324047	4/6/2023	Heritage Transport	42-25	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	17	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
773	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324129	4/6/2023	Heritage Transport	MJVU 15196	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
774	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324130	4/6/2023	Heritage Transport	HESU 49401	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
775	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324131	4/6/2023	Heritage Transport	HESU 49426	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
776	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316147	4/6/2023	US Bulk Transport	174-C	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
777	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292984	4/6/2023	Page E.T.C.	F43143	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
778	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316148	4/6/2023	US Bulk Transport	339A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
779	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316149	4/6/2023	US Bulk Transport	331A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
780	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316150	4/6/2023	US Bulk Transport	177A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
781	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316151	4/6/2023	US Bulk Transport	22	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
782	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324023	4/6/2023	Heritage Transport	4236	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
783	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324024	4/6/2023	Heritage Transport	42-24	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
784	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316152	4/6/2023	US Bulk Transport	3	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
785	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324048	4/6/2023	Heritage Transport	42-28	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
786	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322784	4/6/2023	US Bulk Transport	1217A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
787	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427482	4/6/2023	Enviroserve	EPIU224720	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
788	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325006	4/6/2023	Page E.T.C.	39922	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
789	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322984	4/6/2023	Beelman Truck Co	G818	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
790	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324132	4/6/2023	Heritage Transport	HESU49340	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
791	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906437	4/6/2023	US Bulk Transport	145-1A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
792	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324025	4/6/2023	Heritage Transport	42-30	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
793	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322975	4/6/2023	Beelman Truck Co	G751	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
794	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324026	4/6/2023	Heritage Transport	42-27	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
795	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316154	4/6/2023	US Bulk Transport	1253A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
796	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324133	4/6/2023	Heritage Transport	HESU 48181	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
797	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324134	4/6/2023	Heritage Transport	HESU 48352	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
798	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322785	4/6/2023	US Bulk Transport	106A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
799	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906446	4/6/2023	US Bulk Transport	105A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
800	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888127	4/6/2023	Ross Transportation Services	SB1578	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
801	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322976	4/6/2023	Beelman Truck Co	G33	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
802	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316155	4/6/2023	US Bulk Transport	125A	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
803	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316156	4/6/2023	US Bulk Transport	90924	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
804	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324049	4/6/2023	Heritage Transport	42-33	Dump truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
805	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325005	4/6/2023	Basin Transportation	AJMU112	Roll off	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	10	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
806	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292996	4/6/2023	Basin Transportation	1623	Roll off	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	10	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
807	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886938	4/7/2023	US Bulk Transport	126A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

All volumes in *italics* are estimated. Actual received volumes will be provided when final manifests are uploaded to RCRAInfo, e-manifests.

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
808	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024886939	4/7/2023	US Bulk Transport	190A	Dump truck	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
809	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427481	4/7/2023	Enviroserve	EPIU224732	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
810	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	154632	024888197	4/7/2023	Ross Transportation Services	SB2828	Roll off	Ross Incineration Services	36790 Giles Rd. Grafton, OH 44044	OHD048415665	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
811	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324135	4/7/2023	Heritage Transport	ESDU0095	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
812	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001325007	4/7/2023	Page E.T.C.	D7612	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
813	Soil Impacted with Vinyl Chloride (>10X UTS)	U043	224090-1	001324136	4/7/2023	Heritage Transport	HESU 49331	Intermodal	Heritage Thermal Services	1250 Saint George St. Unit 1 East Liverpool, OH 43920	OHD980613541	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
814	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322796	4/7/2023	US Bulk Transport	383A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
815	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427479	4/7/2023	Enviroserve	EPIU224853	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
816	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427478	4/7/2023	Enviroserve	EPIU224625	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
817	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427480	4/7/2023	Enviroserve	EPIU224489	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
818	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427477	4/7/2023	Enviroserve	EPIU224701	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
819	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324050	4/7/2023	Heritage Transport	42-31	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
820	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322985	4/7/2023	Beelman Truck Co	G34	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
821	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906518	4/7/2023	Basin Transportation	ED08	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	21	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
822	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316157	4/7/2023	US Bulk Transport	163A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
823	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316158	4/7/2023	US Bulk Transport	142-1H	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
824	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316159	4/7/2023	US Bulk Transport	171B	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
825	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316160	4/7/2023	US Bulk Transport	345-1A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	24	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
826	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322977	4/7/2023	Beelman Truck Co	G669	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	27	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
827	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	CH2567444-DR	017906436	4/7/2023	US Bulk Transport	109A	Dump truck	Clean Harbors Deer Trail LLC	108555 East Highway 36 Deer Trail, CO 80105	COD991300484	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
828	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292985	4/7/2023	Page E.T.C.	074174	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
829	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292986	4/7/2023	Page E.T.C.	053804	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
830	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316161	4/7/2023	US Bulk Transport	348A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
831	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427456	4/7/2023	Enviroserve	EPIU224515	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
832	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001292987	4/7/2023	Page E.T.C.	058175	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
833	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001324027	4/7/2023	Heritage Transport	42-23	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	20	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Load #	Material Type	Waste Codes	Approval #	Manifest Tracking No.	Transport Date	Transporter Name and ID	Trailer Container #	Container Type	Disposal Facility Name	Facility Address	U.S. EPA ID	Disposal Status	Manifested Facility Volume (Tons)	Final Facility Weight (tons)	DOT Proper Shipping Name
834	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001316331	4/7/2023	US Bulk Transport	DT1510	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
835	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322797	4/7/2023	US Bulk Transport	DT1505	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	25	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
836	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322798	4/7/2023	US Bulk Transport	538A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
837	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427492	4/7/2023	Enviroserve	EPIU224728	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
838	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322799	4/7/2023	US Bulk Transport	167A	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	23	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
839	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	WP-9984	025427493	4/7/2023	Enviroserve	EPIU224635	Intermodal	Waste Control Specialist	9998 West, TX-176 Andrews, TX 79714	TXD988088464	In Transit	22	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III
840	Soil Impacted with Vinyl Chloride (<10X UTS)	U043	224090-2	001322986	4/7/2023	Beelman Truck Co	G678	Dump Truck	Heritage Environmental Services	4370 W County Road 1275 N Roachdale, IN 46172	IND980503890	In Transit	26	<i>pending</i>	NA3077, Hazardous Waste, Solid, n.o.s., (vinyl chloride, butyl acrylate), 9, PG III

Attachment 6

**Carroll/Columbiana/Harrison Solid Waste Management District,
2018-2032 Solid Waste Management Plan, Appendix P -
Designation**

APPENDIX P DESIGNATION

A. Statement Authorizing/Precluding Designation

Due to the SWMD's proximity to other states, the Policy Committee and Board of Directors determined the need to establish designation, providing for all disposal facilities that desired to accept waste from Carroll, Columbiana and Harrison counties the opportunity to do so provided they signed a contract with the SWMD, agreed to provide accurate documentation of the waste going into their facility and paid the same fee that all other facilities were contracted to pay. This leveled the playing field for haulers and disposal facilities in and out-of-state.

Pursuant to Section 3734.53(E)(1) of the Ohio Revised Code, the Board of Directors of the SWMD is hereby authorized to continue with facility designations as they are currently and to establish new facility designations under Section 343.014 of the Ohio Revised Code.

If a facility has not requested designation during the original designation process, they may submit a request for a waiver for facility designation. The request must be in writing and provide information regarding the type and amount of material, the facility to be used, the duration of the waiver, the reason for requesting the waiver and the impact on Plan implementation and financing. The SWMD Board of Directors may request additional information from the applicant for a waiver if the information it receives is incomplete. Once the application is submitted and complete, the SWMD Board of Directors will determine, within 90 days, whether to approve or disapprove the waiver request. The SWMD Board of Directors may grant the request for waiver if the Board of Directors determines that:

1. The waiver is not inconsistent with projections contained in the SWMD's approved plan under Sections 3734.53(A)(6) and (A)(7) of the Ohio Revised Code; and
2. The issuance of the waiver will not adversely affect implementation and financing of the plan.

B. Designated Facilities

Table P-1 Designated Facilities

Facility Name	Location		Facility Type	Year Designated
	County	State		
<i>In-District</i>				
Kimble Transfer (J&J Refuse)	Carroll	Ohio	Transfer Facility	2005
<i>Out-of-District</i>				
Akron Transfer Station	Stark	Ohio	Transfer Facility	2005

Appendix P Designation

American Landfill	Stark	Ohio	Landfill	2005
Apex Landfill	Jefferson	Ohio	Landfill	2006
Athens-Hocking Reclamation Ctr.	Athens	Ohio	Landfill	2005
Cambridge Transfer & Recycling	Muskingum	Ohio	Transfer Facility	2005
Carbon Limestone Landfill	Mahoning	Ohio	Landfill	2005
Cleveland Transfer Station	Cuyahoga	Ohio	Transfer Facility	2005
Coshocton Landfill, Inc.	Coshocton	Ohio	Landfill	2005
Countywide Recycling & Disposal	Stark	Ohio	Landfill	2005
Geneva Landfill	Ashtabula	Ohio	Landfill	2005
Harrison County Landfill	Harrison	Ohio	Landfill (not open)	2005
Kimble Sanitary Landfill	Tuscarawas	Ohio	Landfill	2005
Kimble Transfer & Recycling	Stark	Ohio	Transfer Facility	2005
Kimble Transfer & Recycling	Summit	Ohio	Transfer Facility	2009
Liberty Tire Services of Ohio LLC	Stark	Ohio	Tire Monofill	2005
Lorain County Landfill, LLC	Lorain	Ohio	Landfill	2005
Mahoning Landfill	Mahoning	Ohio	Landfill	2005
Noble Road Landfill	Richland	Ohio	Landfill	2005
Pine Grove Landfill	Fairfield	Ohio	Landfill	2005
Portage County SW Transfer	Portage	Ohio	Transfer Facility	2005
Suburban Landfill	Perry	Ohio	Landfill	2005
<i>Out-of-State</i>				
Arden Landfill		Pennsylvania	Landfill	2005
Evergreen Landfill		Pennsylvania	Landfill	2005
Imperial Landfill		Pennsylvania	Landfill	2005
Kelly Run Sanitation		Pennsylvania	Landfill	2005
Laurel Highlands Landfill		Pennsylvania	Landfill	2005
Seneca Landfill		Pennsylvania	Landfill	2005
Seneca Transfer Facility		Pennsylvania	Transfer Facility	2005
Shade Landfill		Pennsylvania	Landfill	2005
Short Creek Landfill		West Virginia	Landfill	2005
South Hills Landfill		Pennsylvania	Landfill	2005
Southern Alleghenies Landfill		Pennsylvania	Landfill	2005
Tri-County Transfer Station		Pennsylvania	Transfer Facility	2005
Tri-County Landfill		Pennsylvania	Landfill	2005
Valley Landfill		Pennsylvania	Landfill	2005
Valley Waste Services TF		Pennsylvania	Transfer Facility	2016

Appendix P Designation

The SWMD has designated thirty-seven (37) solid waste facilities as the only facilities that may accept solid waste generated within the District. Each designated solid waste facility is contractually required to provide monthly reports regarding the generator/hauler, amount of solid waste received, and the type of material received from each of our three (3) counties.

C. Documents

Sample Fee Statements, Designation Agreements, and Waiver Agreements are attached.

CONTRACT FEE SUBMITTAL FORM
Certified Statement

For the month of: _____ 20 _____

Facility Name & Phone: _____

Ohio C.I.D. Number: _____

*The contract fees for each month must be received by the District
no later the 25th day of the following month.
If the 25th day of the month falls on a weekend or holiday, the fee is due the previous business day.*

A. Total tonnage of solid waste that was received at the facility described above:

B. Total Contract fees submitted at \$3.50 per ton:

\$ _____

I hereby certify that the above statements are true and correct.

Authorized Signature

Printed Name and Title

Date

Subscribed and sworn before me this _____ day of _____

Notary Public

Commission Expires: _____

Make checks payable to the **Carroll County Treasurer** and mail both the form and check to:
CCH Solid Waste Management District
618 Canton Road, Suite B, Carrollton, Ohio 44615
(330) 627-7311

*Any questions regarding submittal of fees please contact:
Barbara Walton, Director*

CONTRACT WAIVER FEE SUBMITTAL FORM
Certified Statement

For the month of: _____ 20_____

Facility Name & Phone: _____

Ohio C.I.D. Number: _____

*The contract fees for each month must be remitted to the District
no later the 25th day of the following month.
If the 25th of the month falls on a holiday, the fees must be remitted the previous workday.*

A. Total tonnage of solid waste that was received at the facility described above:

0.00

B. Total Contract fees submitted at \$3.50 per ton:

\$0.00

I hereby certify that the above statements are true and correct.

Authorized Signature

Printed Name and Title

Date

Subscribed and sworn before me this
_____ day of _____

Notary Public

Commission Expires: _____

Make checks payable to the **Carroll County Treasurer** and mail both the form and check to:
CCH Environmental Group
618 Canton Road, Suite B, Carrollton, Ohio 44615
(330) 627-7311
*Any questions regarding submittal of fees please contact:
Barbara Walton, Director*

DESIGNATION AGREEMENT

THIS AGREEMENT, made and entered into as of the _____ day of _____, 20__ by and between the Board of Directors, in its capacity as the governing body (the "Board"), of the Carroll-Columbiana-Harrison Joint Solid Waste Management District, with offices located at 618 B Canton Road N.W., Carrollton, Ohio, 44615, (the "District") and _____ with an office located at _____ (the "Contractor").

RECITALS

WHEREAS, the Board has reserved the authority to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code in Section VI E. of the District Solid Waste Management Plan (the "Plan"), approved by the Director of the Ohio Environmental Protection Agency on May 26, 2005 ; and

WHEREAS, the Board has determined that to finance implementation of the Plan, it is necessary to contract with and designate solid waste facilities, whereby such designated facilities agree to pay a fee to the District as consideration for designation (the "Contract Fee") as authorized pursuant to sections 343.01(H), 343.014, 343.02 and 343.022 of the Ohio Revised Code; and

WHEREAS, the Board has previously designated facilities under its authority, but has determined that said designations should be periodically updated; and

WHEREAS, the Board adopted a Resolution of Intent to Designate on May 12, 2009, a Resolution of Intent to Establish Designation on June 15, 2009, and a Resolution Designating Solid Waste Facilities on November 3, 2009 and has completed all of the actions required by Section 343.014 of the Ohio Revised Code; and

WHEREAS, the Contractor owns and operates a solid waste landfill or solid waste transfer station under the name of _____ located at _____ (the "Contractor's Facility"), as more particularly described in attached Exhibit A, and has submitted a Request for Designation for the Contractor's Facility in response to the Invitation for Designation; and

WHEREAS, the Board has reviewed the Contractor's Request for Designation and has determined that the Contractor's Facility meets the requirements of the Invitation for Designation, and the Board desires to designate the Contractor's Facility for the receipt of solid waste generated within the District for the transfer or disposal of solid waste.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein, the parties agree as follows:

ARTICLE I – DISTRICT’S DESIGNATION OF CONTRACTOR’S FACILITY

- 1.1 The District hereby designates the Contractor’s Facility pursuant to Section 343.014 of the Ohio Revised Code, as now existing or hereafter amended, as a solid waste facility authorized to receive solid waste generated within the District for the transfer or disposal of solid waste.
- 1.2 The parties acknowledge and agree that Section 343.01(I)(2) of the Ohio Revised Code provides that solid waste generated within the District can be transferred to or disposed of only at facilities designated by the Board under Section 343.014 of the Ohio Revised Code, and that such designations by the Board includes or will include facilities other than the Contractor’s Facility on the same terms and conditions as this Agreement. It is further the understanding of the parties that the District does not contemplate requiring any person, municipal corporation, township or other political subdivision located within the District to deliver or cause to be delivered any solid wastes to any particular designated facility.

ARTICLE II – CONTRACTOR’S OBLIGATIONS

- 2.1 The Contractor shall perform and complete in a workmanlike manner all work required to operate and maintain the Contractor’s Facility, or cause the Contractor’s Facility to be operated and maintained, in compliance with all applicable federal, state and local laws as well as the terms and conditions of any applicable licenses or permits.
- 2.2 The Contractor agrees to pay to the District a Contract Fee on all solid waste generated within the District that is received at the Contractor’s Facility, from the effective date of this Designation Agreement until this Agreement is terminated as provided herein. The Contractor agrees to pay to the District a Contract Fee of Three Dollars and Fifty Cents (\$ 3.50) per ton of solid waste generated within the District that is received at the Contractor’s Facility on and after January 2, 2010 and during the remainder of the term of this Agreement. Each month, the Contractor shall submit to the District a monthly certified Contract Fee statement, on a form prescribed by the District, on which the Contractor shall separately identify the tonnage (expressed in tenths of a ton) of solid waste generated within the District that was delivered to the Contractor’s Facility during the preceding calendar month, and the amount of the Contract Fee due on that tonnage. The Contractor shall forward to the District payment in the amount of the Contract Fee identified in the monthly report together with the submittal of the monthly report. Both the Contract Fee statement and the Contract Fee payment must be received by the District by the 25th of each month. If the Contractor’s Facility is a solid waste transfer station upon which the Contract Fee has been paid in accordance with this Agreement, the District agrees that solid waste transferred from such facility shall not be subject to the Contract Fee upon delivery of that solid waste to a solid waste disposal facility. The Board may change the amount of the Contract Fee upon advance written notice of ninety (90) days to the Contractor, provided the Board uniformly changes the amount of the Contract Fee payable by all designated solid waste facilities, and provided that the Board uniformly changes the amount of any Waiver Fee paid by any solid waste facility that has been granted a waiver, such that all designated solid waste facilities pay the same Contract Fee or Waiver Fee.

Appendix P Designation

- 2.3 Failure to make timely payment of the Contract Fee as provided herein will result in a \$100 per day penalty for each day beyond the 25th day of each month that payment is late. Continued failure to make timely payment of the Contract Fee shall constitute a default by the Contractor for which the District may terminate this Designation Agreement, and thereby terminate the right of the Contractor's Facility to receive and accept solid waste generated within the District. Such termination shall be in addition to any other default rights or remedies the District may have at law or in equity.

SECTION III - TERM

- 3.1 This Agreement shall be effective as of _____ with payment of the Contract Fee to commence on solid waste generated within the District and received at the Contractor's Facility after _____.
- 3.2 The District or Contractor may terminate this Agreement for any reason upon written notice of ninety (90) days to the other party.
- 3.3 The District and Contractor understand that this Agreement may be subject to periodic renewal, under the same or similar terms and conditions.

SECTION IV - MISCELLANEOUS

- 4.1 This Agreement may be assigned by the Contractor to any successor in interest at the Contractor's Facility with the consent of the District. Such consent shall not be unreasonably withheld by the District.
- 4.2 This Agreement shall be binding upon and shall inure to the benefit of the parties, and their successors, respective heirs, personal representatives, and assigns.
- 4.3 This Agreement shall constitute the entire understanding between the parties.
- 4.4 No amendments or variations of the terms and conditions of this Agreement shall be valid unless the same are in writing and signed by all parties.
- 4.5 This Agreement shall be construed and enforced pursuant to the laws of the State of Ohio.
- 4.6 Any action regarding this Agreement shall be brought in a court of competent jurisdiction in Carroll County, Ohio.

Appendix P Designation

IN WITNESS WHEREOF, the parties by their duly authorized officers, trustees or partners, have executed this Agreement in duplicate as of the date set forth above.

DISTRICT:

Chair, Board of Directors
Carroll-Columbiana-Harrison Joint
Solid Waste Management District

Date

CONTRACTOR:

Signature

Date

Printed Name

WAIVER AGREEMENT

The Board of Directors ("the Board"), in its capacity as the governing body of the Carroll-Columbiana-Harrison Joint Solid Waste Management District ("the District"), a joint solid waste management district established pursuant to section 343.011 of the Revised Code, enters into this Waiver Agreement with _____, with a solid waste disposal or transfer station located at _____ ("the Facility"), or its appropriate parent, subsidiaries or affiliates (the "Grantee"), which shall become effective on the date of last execution (the "Effective Date").

RECITALS

WHEREAS, the District is a political subdivision of the State of the Ohio charged with the management of solid waste generated within the District; and

WHEREAS, in accordance with Chapters 343 and 3734 of the Revised Code, the District's Solid Waste Management Plan (the "District Plan"), as now existing or as updated hereafter, and rules adopted by the Board as now existing or as amended hereafter (the "District Rules"), all solid waste generated within the District (the "District Solid Waste") shall be delivered only to solid waste facilities designated by the District unless a waiver granted by the District pursuant to Section 343.01(1)(2) of the Revised Code authorizes the delivery of District Solid Waste to undesignated solid waste facilities; and

WHEREAS, Grantee requests a waiver from the Board, and the Board, pursuant to Section 343.01(1)(2) of the Revised Code finds that the waiver request from Grantee is not inconsistent with the projections contained in the District Plan and will not adversely affect the implementation and financing of the District Plan; and

WHEREAS, the Board and Grantee desire to document the waiver (the "Waiver") granted by the Board to Grantee in this Waiver Agreement.

NOW, THEREFORE, in consideration of the promises and covenants contained herein and the mutual benefits to be gained hereby, the parties incorporate the foregoing recitals and agree as follows:

1. Pursuant to the terms and conditions contained herein, the Board grants and Grantee accepts the Waiver which authorizes Grantee to accept District Solid Waste at the Grantee's Facility.
2. The Grantee, in consideration of the Waiver granted herein, shall pay to the District a fee levied on each ton of District Solid Waste that is accepted at the Facility (the "Waiver Fee"). The amount of the Waiver Fee may be modified from time-to-time by the Board, in the exercise of the sole discretion of the Board, and shall be an amount equal to the Waiver Fee paid by any other person granted a waiver by the Board. The Waiver fee shall also at all times be equal to the fee paid to the District as consideration for designation (the "Contract Fee"). The Board has established a Contract Fee of Three

Appendix P Designation

Dollars and Fifty Cents (\$ 3.50) per ton of solid waste generated within the District that is received at Designated Facilities on and after January 2, 2010.

3. Grantee also agrees to comply with all existing District Rules established by the Board, or any subsequently adopted rules; agrees not to challenge any amendments to the District Plan; or bring any action against the District relating to compliance with the District Plan or District Rules.
4. Grantee agrees to maintain daily records at the Facility identifying: (a) the amount of District Solid Waste in tons that Grantee accepts at the Facility pursuant to this Waiver Agreement; and (b) the name and address of each hauler that delivers District Solid Waste to the Facility. The District, or its authorized representatives, shall have the right to inspect and copy the daily records maintained by Grantee pursuant hereto during the regular business hours of Grantee's Facility.
5. Grantee shall pay the Waiver Fee in accordance with the rules established and amended by the District from time-to-time, and the payment procedures set forth in the subparagraphs below:
 - a. By the 25th day of each calendar month, Grantee shall remit to the District the total Waiver Fees owed for the total number of tons (expressed in tenths of a ton) of District Solid Waste received at the Facility during the previous calendar month.
 - b. With each monthly payment of the Waiver Fee, Grantee shall provide the information requested on any "Waiver Fee Submittal Form" as prescribed by the District. The "Waiver Fee Submittal Form" may be amended from time-to-time by the District.
 - c. Failure to make timely payment of the Waiver Fee as provided herein will result in a \$100 per day penalty for each day beyond the 25th day of each month that payment is late. Continued failure to make timely payment of the Waiver Fee shall constitute a default by the Grantee for which the District may terminate this Waiver Agreement, and thereby terminate the right of the Grantee's Facility to receive and accept solid waste generated within the District. Such termination shall be in addition to any other default rights or remedies the District may have at law or in equity.
6. The term of this Waiver Agreement shall commence on the Effective Date and shall terminate on _____. The District and Grantee understand that this Waiver Agreement may be subject to periodic renewal, under the same or similar terms and conditions. The District or Grantee may terminate this Waiver Agreement for any reason upon written notice of ninety (90) days to the other party.
7. The Grantee shall perform and complete in a workmanlike manner all work required to operate and maintain the Grantee's Facility, or cause the Grantee's Facility to be operated and maintained, in compliance with all applicable federal, state and local laws as well as the terms and conditions of any applicable licenses or permits.

Appendix P Designation

- 8. This Waiver Agreement may be assigned by the Grantee to any successor in interest at the Grantee's Facility with the consent of the District. Such consent shall not be unreasonably withheld by the District.
- 9. This Waiver Agreement shall be binding upon and shall inure to the benefit of the parties, and their successors, respective heirs, personal representatives, and assigns and this Waiver Agreement shall constitute the entire understanding between the parties. No amendments or variations of the terms and conditions of this Waiver Agreement shall be valid unless the same are in writing and signed by all parties. This Waiver Agreement shall be construed and enforced pursuant to the laws of the State of Ohio and any action regarding this Waiver Agreement shall be brought in a court of competent jurisdiction in Carroll County, Ohio.
- 10. If the District determines that the Grantee has violated or breached any of Grantee's payment and/or reporting obligations, Grantee shall cure such breach within thirty (30) days of receipt of written notice of such breach from the District. If Grantee fails to cure such breach within thirty (30) days, the District shall have the right to terminate this Waiver Agreement effective on the thirty-first (31st) day after Grantee has received written notice of the breach of payment or reporting obligations as termination for cause. Other circumstances which entitle the District to terminate this Waiver Agreement upon thirty (30) days written notice for cause include violation of the District's Rules, or violation of other terms of this Agreement. There is no obligation or expectation that there exists an opportunity to cure any alleged breach of this Waiver Agreement other than those outlined above.
- 11. All notices, payments, reports, certificates, requests or other communications hereunder shall be in writing and shall be deemed given if delivered in person to the individual or to a member of the company or organization for whom the notice is intended, or delivered by certified mail, return receipt requested, to the appropriate following address:

If to the District:

Carroll-Columbiana-Harrison Joint Solid Waste Management District
618 Canton Road N.W., Suite B
Carrollton, Ohio, 44615
Attn: Director

If to Grantee:

Attn: _____

Appendix P Designation

IN WITNESS WHEREOF, the parties by their duly authorized officers, trustees or partners, have executed this Waiver Agreement in duplicate as of the dates set forth below.

DISTRICT:

Chairman, Board of Directors
Carroll-Columbiana-Harrison Joint
Solid Waste Management District

Date

Printed Name

GRANTEE:

Signature

Date

Printed Name

Approved as to form:

Donald R. Burns,
Carroll County Prosecutor

Attachment 7

Secondary Containment Standard Operating Procedures

**Secondary Containment Management
Norfolk Southern Train Derailment
East Palestine, Ohio
Date: April 12, 2023**

Secondary Containment Management for Temporary units and the Area of Contamination

Wastes generated as a result of the train derailment are currently stored in staging piles, temporary units (TUs) and containers (drums and totes). Locations of designated waste storage areas are provided in Figure 1 of the Waste Management Plan. All storage areas are equipped with secondary containment that is designed and constructed of suitable materials (e.g., non-earthen materials) to prevent any waste or precipitation collected in the system from reaching the environment. Below is a description of the secondary containment in place at each waste storage area.

- Tank Farms 5 and 6 have welded HDPE liner covering the entire tank farm area with additional HDPE installed under the temporary storage tanks. Rig mats have been placed over the liner to prevent punctures. A containment berm was created using hay bale berms overlain by HDPE liner.
- Tank Farms 2, 3 and 4 and Stand by Tank Farms 1, 2 and 3 and the wastewater treatment plant have individual HDPE liners installed under each temporary storage tank and container storage areas.
- Tank Farm 1 contains two modular tanks were installed within a single secondary containment consisting of an impermeable liner (120 mil Linear Low-Density Polyethylene (LLDPE) liner manufactured by ATARFIL), steel sheet piles, and earthen berms.
- Soil generated within the Area of Contamination is consolidated into staging piles that are placed on a welded HDPE liner system. The containment berm is constructed with hay bale that are covered by the HDPE liner.
- Additional secondary containments (buckets/ kiddie pools) are placed under hose connections during loading and offloading of the temporary storage tanks. Secondary containment utilized during loading and offloading operations for the modular tanks is provided in the Modular Tank Summary Sheet (April 7,2023, Arcadis)

At a minimum, all tanks, containers, staging piles and secondary containment systems are inspected daily. Inspections are recorded in the project files and available for review upon request. If a container or tank is found leaking or unfit for use, the container or tank will be immediately addressed, and the released waste will be immediately transferred to another suitable container or tank. If a secondary containment system is found compromised (unable to collect or prevent a release to the environment), the secondary containment will be repaired. The repair must be sufficient to prevent any waste or precipitation collected in the system from reaching the environment. If unable to be repaired, the unit will be taken out of service.

If waste or rain water is identified in the secondary containment that released waste (solid or liquid) or accumulated precipitation will be removed from the secondary containment as soon as practicable but not later than 24 hours. If waste or precipitation is released outside of secondary containment, the release will be immediately stopped and cleaned-up. Any released waste, accumulated precipitation and/or resulting clean-up materials will be collected and characterized for offsite disposal at a permitted facility.

Any releases outside of secondary containment will be collected and contained. For solid materials, the waste will be returned to the original or intended container or stockpile. Any sidewall of the secondary containment that is compromised will be reenforced with hay bales or similar structurally sound material. For liquids that are released outside of secondary, the impacted surface material will be excavated and containerized in labeled roll-offs or drums and may be consolidated with similar waste streams.

Attachment 8

Temporary Unit Inspection Form

RCRA Container Accumulation Area Checklist—Large Quantity Generators

Date: _____ Time: _____ Inspector's Name: _____

Checked/Observations/ Repairs made	Requirement	Regulatory Citation
Satellite Accumulation Area		
	Waste is accumulated at or near the point of generation and “under the control of the operator.”	§262.15(a)
	Container has less than 55 gallons of HW or less than 1 quart/1 kg of acute HW.	§262.15(a)
	Container is in good condition and non-leaking.	§262.15(a)(1)
	Waste is compatible with container that it is stored in.	§262.15(a)(2)
	Only compatible wastes are accumulated in the container, and the container is separated from nearby incompatible materials.	§262.15(a)(3)
	Container is closed except when adding, removing, or consolidating waste, or when temporary venting is necessary.	§262.15(a)(4)
	Container is marked with the words “Hazardous Waste” and an indication of the hazards of the contents.	§262.15(a)(5)
	Satellite area complies with all preparedness and prevention requirements noted below.	§262.15(a)(8)
90-Day Container Accumulation Area		
Container Requirements—Part 262, Subpart A		
	Accumulation start dates are ≤90 days old, unless an extension has been approved by the state per §262.17(b).	§262.17(a)
	Container complies with Subpart CC air emission controls.	§262.17(a)(1)(i)
	Container is in good condition and non-leaking.	§262.17(a)(1)(ii)
	Waste is compatible with container that it is stored in.	§262.17(a)(1)(iii)
	Container is closed except when adding or removing waste.	§262.17(a)(1)(iv)(A)
	Container is not stored in a way that would cause it to spill or leak.	§262.17(a)(1)(iv)(B)
	Weekly inspections are conducted.	§262.17(a)(1)(v)
	Ignitable and reactive wastes are stored at least 15 meters (50 feet) from facility's property line (unless a waiver from this requirement is in facility files).	§262.17(a)(1)(vi)(A)
	Ignitable and reactive wastes are separated and protected from sources of ignition or reaction, and “No Smoking” signs are posted.	§262.17(a)(1)(vi)(B)
	Only compatible wastes are accumulated in the container, and the container is separated from nearby incompatible materials.	§262.17(a)(1)(vii)
	Container is marked with the words “Hazardous Waste” and an indication of the hazards of the contents.	§262.17(a)(5)(i)(A-B)
	Container is marked with the accumulation start date.	§262.17(a)(5)(i)(C)
	90-day area complies with all preparedness and prevention requirements noted below.	§262.17(a)(6)
Preparedness and Prevention—Part 262, Subpart M		
	Area is maintained in a manner to prevent fire, explosions, or spills.	§262.251
	Area must be equipped with (unless hazards posed would not require): 1. Internal communications to signal emergency to facility personnel. 2. Communication device to alert local emergency response personnel. 3. Fire extinguishers, spill control equipment, and decontamination equipment. 4. Fire suppression: adequate water supply or foam producing equipment.	§262.252
	Testing and maintenance of equipment.	§262.253
	Immediate access to communication equipment when handling hazardous waste.	§262.254
	Adequate aisle space.	§262.255

Pre-Transport Requirements—Part 262, Subpart C		
	Packaging: Containers meet all applicable standards for the type of waste they hold. (See DOT regs at 49 <i>CFR</i> Parts 173, 178, and 179.)	\$262.30
	Labeling (DOT Warning Labels): (See DOT regs at 49 <i>CFR</i> Part 172).	\$262.31
	<p>Marking: Containers of 119 gallons or less must comply with DOT regs at 49 <i>CFR</i> Part 172. This includes the “proper shipping name”—49 <i>CFR</i> 172.301. Containers must also be marked with the following words and information:</p> <ol style="list-style-type: none"> 1. “HAZARDOUS WASTE—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.” 2. Generator’s name and address. 3. Generator’s EPA ID number. 4. Manifest tracking number. 5. Hazardous waste codes.¹ 	\$262.32

¹In lieu of marking containers with hazardous waste codes, a nationally recognized electronic system (such as bar codes) may be used.

HW = Hazardous waste

Source: McCoy and Associates, Inc.

Facility Name:		Hazardous Waste Tank System Daily Inspection Log: Tank: stationary dangerous waste storage or treatment tank and its associated ancillary equipment and containment system.
Year :	Month:	
Tank ID:		For Large Quantity Generators of Hazardous Waste (and TSD's)

Instructions: <ul style="list-style-type: none"> The person conducting the inspection must also complete this log. Check (✓) box if ok. For problems, X box and explain on the reverse. Describe any event, (spills, cracked or compromised containment, non-functional safety equipment, etc.) and corrective actions on the reverse. Report spills or leaks to your supervisor immediately. 				System free of corrosion and evident damage?	Secondary containment free of waste and liquid?	Pipes, valves, & pumps free of leaks & in good condition?	There is no evidence of structure failures or releases?	Monitoring equipment data evaluated to ensure proper operation?	Overfill control inspection schedule & procedures followed?	Cathodic protection system inspected yearly?	Sources of impressed current inspected/tested every other month?	Comment: X box and explain on reverse.
Day	Printed Name	Signature	Time									
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												

1. Daily tank inspection required for each dangerous waste tank.
 Keep inspection log for 10 years from date of inspection:
 Continue on reverse if necessary: list observations made and date and nature of any corrective measures taken.



NS BLUE FLAG PROTECTION CHECKLIST

DATE: _____

LOCATION: _____

NS BLUE FLAG POINT OF CONTACT: _____

NS BLUE FLAG POINT OF CONTACT PHONE#: _____

COMPANY PROVIDING BLUE FLAG: _____

PREWORK:

1. Safety Briefing conducted with NS Point of Contact prior to applying Blue Flag Protection.
 - Yes
 - Date/Time: _____
2. Facing point switches are aligned and locked against movement into track requiring protection.
 - Yes
 - N/A
3. Derails engaged and locked against movement into track area requiring protection.
 - Yes
 - N/A
4. Blue Flag or Blue Light is displayed at locked facing point switches or derails.
 - Yes
 - N/A

POST WORK:

1. Locks are removed from all switches used to provide Blue Flag protection:
 - Yes
 - N/A
2. All derails used to provide Blue Flag Protection are disengaged or removed.
 - Yes
 - N/A
3. All Blue Flags or Blue Signals used to provide protection are removed.
 - Yes
 - N/A
4. Post Work Briefing is conducted with NS Point of Contact to confirm removal of Blue Flag Protection.
 - Yes
 - Date/Time: _____



TANK CAR INSPECTION FORM
 Re: Vinyl Chloride Impacted Water
 RCRA (U043), DOT Class 9, UN3082

Location: *Norfolk Southern Corp. - Lordstown, Ohio*

Date of Pre-Load Inspection:
Date of Post-Load Inspection:
Tank Car Number:
Tank Car Specification:

Pre-Loading Inspection Items:

	O.K.	Defect	If Defect, Comment...
General Visual Inspection, No Obvious Damage to Car			
Safety Appliances (ladders, handrails, steps walkways)			
Running Gear (springs, wheels, couplers, sill, etc.)			
Car Stenciling is on car, within Qual. dates, & readable			
Placard Holder Brackets in Place & in Working Order			
Hand Brakes Operable & Applied for the transfer			
Wheels Chocked prior to the transfer			
Derail Device or Switch Aligned Away & Locked			
Blue Flag(s) Deployed > 50 feet from end of car(s)			
Visual Inspection for Missing or Loose Bolts, Nuts, etc.			
Visual Inspection for Missing or Poor Manway Gasket			
Visual Inspection for Missing or Poor BOV Gasket			
No Indications of Leaks from the tank car			
Was there a security seal on this car at arrival to the transload siding? (y/n)			If Yes, Seal #

Loading & Post-Loading Inspection Items:

	O.K.	Defect	If Defect, Comment...
Valves & Fittings Not Leaking & Closed Tightly			
Secondary Closure Plugs or Flanges & Chains Secured			
All transfer fittings & tools removed from housing			
Lid for Protective Housing Closed, Pinned, and Sealed			
Proper Placards are Present, In Position, & Readable			
Post Load Leak Test (Snoop and/or L.E.L. Meter)			
Tank Car Weight & Outage Limits Not Exceeded*			

*Calculate Below Prior to Answering

Security Seal Applied to Loaded Car? (y/n)	Seal Number Applied to Loaded Car:
--	------------------------------------

Tank Car Product Load Volume Data:

(X) Tank Car Shell Capacity: <i>US Gals.</i>	This wastewater Specific Gravity = 1.0
Do you have the Outage Chart for this car*? (y/n)	Gauge the Outage in Loaded Car: <i>Inches</i>

*If no, you must obtain this outage chart to continue.

(Y) From Outage Chart & Gauge Measurement Data, How Many Gallons of Outage Space? <i>US Gals.</i>

Is the Outage Space in the car at least 2% of the tank car shell capacity? (y/n)
--

(Z) Calculate Gross Volume in car. Subtract (Y) from (X). Total gals.capacity - outage gallons = gross gallons.

Estimated Tank Car Gallons (Z) = <i>US Gals.</i>	Load Weight: Multiply Net Gallons x 8.34 pounds/gal.
Manifest# <i>US Gals.</i>	Load Weight = <i>pounds</i>
Manifest# <i>US Gals.</i>	Max Load Weight Stenciled = <i>pounds</i>
Manifest# <i>US Gals.</i>	Is Load Weight > Than Stenciled Weight?(y/n)
Manifest# <i>US Gals.</i>	

Estimated Volume from Trucks = <i>US Gals.</i>
--

Estimated Tank Car Gallons (Z) = <i>US Gals.</i>

Manifested Volume Discrepancy= <i>US Gals.</i>

Person Completing This Form

Sign Clearly

Appendix A

East Palestine Incident Action Plan, OP6

Approved By

EPA R5:	Dollhopf, Ralph	<i>Ralph Dollhopf</i>
EPA R3:	DiDonato, Ann	<i>Ann DiDonato</i>
Ohio EPA:	Vogel, Anne	<i>Anne Vogel</i>
Norfolk Southern:	Schoendorfer, David	<i>David Schoendorfer</i>
Village of East Palestine FD:	Drabick, Keith	<i>Keith Drabick</i>
Columbiana Co EMA:	Clark, Peggy	<i>Peggy Clark</i>
FEMA:	Boyle, John	<i>Darrin Ricketts</i>
CDC / ATSDR:	Shugart, Jill	<i>LCDR James Gooch</i>
Ohio EMA:	Merick, Sima	<i>Sima Merick</i>

Incident Action Plan



Trucks are pressure washed prior to transporting waste from the site.

Present Conditions

Weather Conditions as of 03/01/2023 14:56

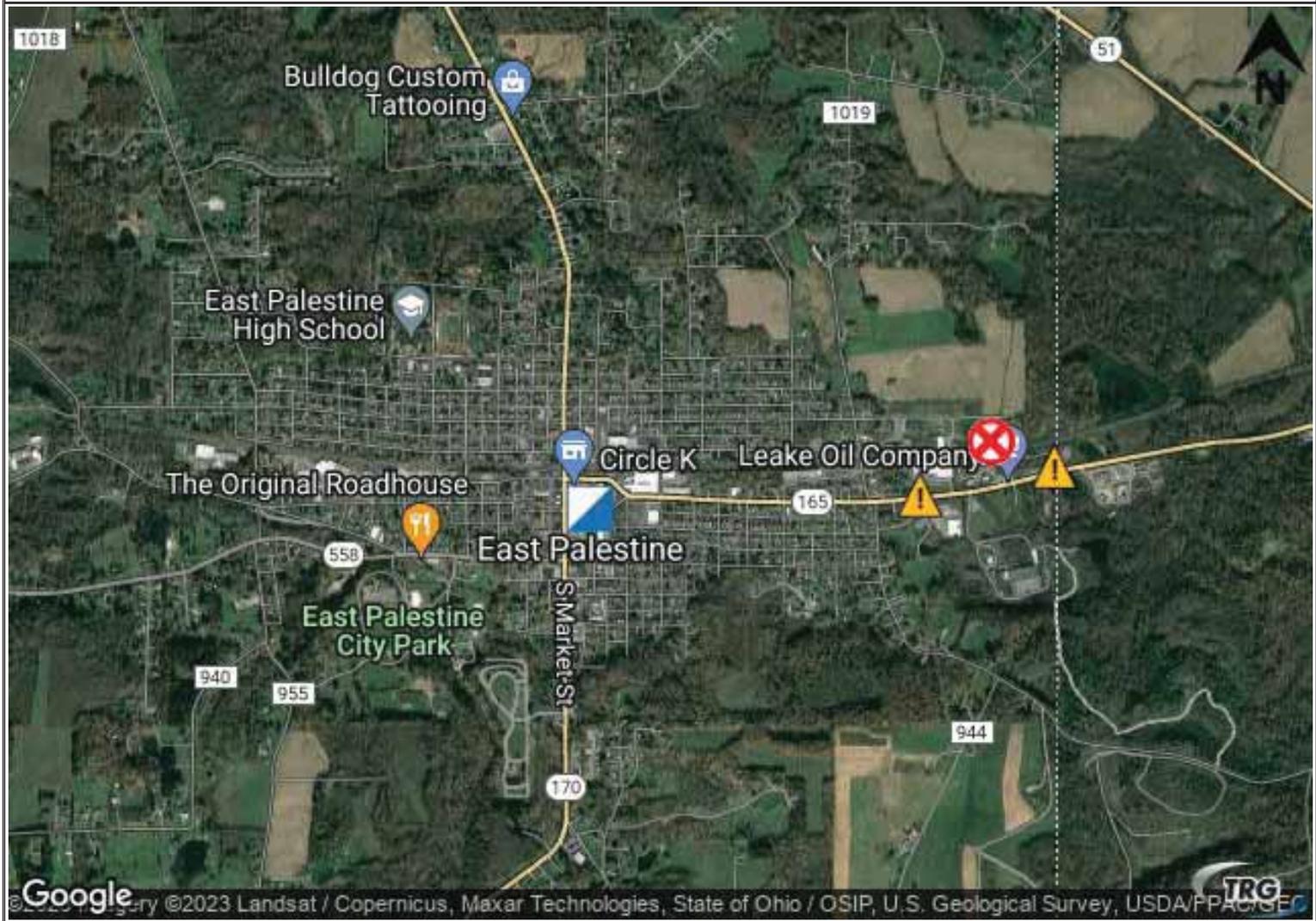
beaver falls arp station id: KBVI

<p>Temperature: 68° Fahrenheit</p> <p>Wind Speed: 9 mph</p> <p>Wind Direction (from): W</p> <p>Visibility: 10 mile(s)</p> <p>Humidity (%): 25 %</p> <p>Short Description: Sunny</p> <p>Full Description: Sunny</p> <p>Current Speed:</p> <p>Current Direction (to):</p> <p>Water Temperature: ° Fahrenheit</p>	<p>Feels Like: 68° Fahrenheit</p> <p>Dew Point: 31° Fahrenheit</p> <p>Pressure: 29.71 in</p> <p>UV Index:</p> <p>Sunrise: 06:55</p> <p>Sunset: 18:12</p> <p>Wave Height: feet</p> <p>Wave Direction:</p> <p>Swell Interval: day(s)</p>
--	---

Forecast Date	Day		Night	
Wed 03/01/2023	 64 °F	Partly Cloudy Chance of Precipitation(%): 0% Wind: ESE at 11 mph	 40 °F	Mostly Cloudy with Light Showers Likely Chance of Precipitation(%): 57% Wind: SSE at 3 mph
Thu 03/02/2023	 51 °F	Partly Cloudy Chance of Precipitation(%): 1% Wind: NW at 7 mph	 32 °F	Mostly Cloudy with Light Snow Showers Chance of Precipitation(%): 7% Wind: N at 9 mph
Fri 03/03/2023	 44 °F	Mostly Cloudy with Wintry Mix Chance of Precipitation(%): 98% Wind: E at 10 mph	 39 °F	Mostly Cloudy with Rain Chance of Precipitation(%): 98% Wind: ESE at 27 mph

Incident Map/Sketch

Community



Map/Sketch	Version Name: 03/01/2023 14:19:32		
Incident Name: East Palestine Train Derailment 02032023	Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]		
<i>Incident Map/Sketch</i>			
EP incident vicinity			
<h1>Exemption 9 - Wells</h1>			
			
Map/Sketch	Prepared By Bryan Naranjo, Updated 03/01/2023 14:19 EST UTC-5 PP		
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:18 EST UTC-5	4 of 36	© TRG

ICS 202 - Incident Objectives		Version Name: 202 20230301	
Incident Name: East Palestine Train Derailment 02032023		Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]	
Objective			
1) Integrate outreach efforts by Unified Command Group organizations.			
2) Review cleanup plans to ensure protection of human health.			
a. Expedite removal and proper disposal of contaminated soil and wastewater.			
3) Evaluate potential public health impacts of track removal operations and train traffic.			
a. Evaluate ongoing air releases.			
b. Ensure communication of potential public impacts prior to activities.			
4) Establish measurable targets for specific operational objectives.			
5) Implement public health assessment of the public and responders.			
6) Integrate operations of all Unified Command Group organizations including Norfolk Southern (NS).			
7) Develop and review work plan(s) for home cleaning efforts and soil sampling.			
8) Establish long-term unified command and incident command posts.			
Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions)			
MANAGEMENT OBJECTIVES			
1. Ensure the health and safety of the public and response personnel.			
2. Maintain and enhance the unified response organization with local/state/federal agencies and NS.			
3. Collect, manage, and communicate multimedia environmental data with local/state/federal agencies and the community in a timely manner.			
4. In coordination with local leaders, conduct public health assessment, data evaluation, and community engagement.			
5. Speak with one voice on public health, natural resources, and environmental conditions (air, soil and water) through transparency and effective communications in coordination with partners in a timely manner.			
6. Provide updates to congressional delegations and the media regarding response progress.			
7. Direct and oversee NS assessment and remediation activities to ensure protection of human health and the environment.			
General Situation Awareness (Safety bullets, Weather, etc.)			
1. Be aware of increased press and VIP visits. Refer all questions to PIO/JIC.			
2. Be aware and respectful of enhanced security measures in ICP areas/clinics.			
3. Obtain and use incident credential.			
4. Be vigilant of odors and air emissions from soil excavation/removal operations			
5. Respect parking restrictions and be respectful of residents/businesses.			
<input type="checkbox"/> Approve Site Safety Plan Located at :			
ICS 202 - Incident Objectives		Prepared By David Popoff, Updated 03/01/2023 22:40 EST UTC-5 PP	
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:18 EST UTC-5	5 of 36	© TRG

ICS 203 - Organization Assignment List		Version Name: 203	
Incident Name: East Palestine Train Derailment 02032023		Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]	
Command		Operations Section	
Incident Commander	Dollhopf, Ralph - US EPA	Operations Section Chief - NS	Williams, Joseph
Deputy Incident Commander	Wolfe, Steve - US EPA	Operations Section Chief - US EPA	Maguire, Andrew
Safety Officer	Horvatin, Shanna - US EPA	Deputy Operations Section Chief - US EPA	Kelly, Brian - USEPA
East Palestine Fire Dept	Drabick, Keith	Deputy Operations Section Chief - FEMA	Ricketts, Darrin
Norfolk Southern	Schoendorfer, David	Monitoring/Sampling Branch Director	Cashmere, Jason
Public Information Officer	Lippert, Allison - US EPA	Site Remediation Branch Director	Kollar, Kurt - Ohio EPA
Liaison Officer	Koller, Mark - US EPA	Site Remediation Branch Deputy Director	Cole, Jackie - USEPA
Liaison Officer	Beckmann, Ronna - US EPA	Site Remediation Branch Deputy Director	Hunt, Daniel - NS
Columbiana Co EMA	Clark, Peggy	ODH	Hines, Lance
EPA Region 3	DiDonato, Ann	Public Health Group	Vins, Wesley
FEMA	Boyle, John	PA DOH	Watkins, Sharon
CDC/ATSDR	Shugart, Jill	CDC/ATSDR	Shugart, Jill
Ohio EPA	Vogel, Anne	US EPA	Fusinski, Keith
Ohio EMA	Merick, Sima	START	Grams, Dustin
Agency/Organization Representatives		USCG - AST	Baynor, Rick
Columbiana Co EMA	Rutledge, Brian	PA Response	DiDonato, Ann
PA DOA	Remmert, Walter	PA DEP	Moore, Brian
PA DEP	Moore, Brian		
PA DEP	Miller, Jim	Finance Section	
ODH	Dr. Vanderhoff, Bruce	Finance Section Chief	Hackley, Rick - US EPA
ODH	Himes, Lance	Deputy Finance Section Chief	Krieger, Geoffrey - US EPA
Columbiana Co HD	Vins, Wesley		
Beaver Co EMA	Brewer, Eric		
Beaver Co EMA	Whipple, Kevin		
PEMA	Bradfield, David (Randy)		
PA DOH	Watkins, Sharon		
PA DOH	Miller, Julie		
WV DEP	Meadows, Nathan		
ORSANCO	Harrison, Richard		
ORSANCO	Dinkins, Sam		
ICS 203 - Organization Assignment List		Prepared By Chris Sweeney, Updated 03/01/2023 18:59 EST UTC-5 PP	
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:18 EST UTC-5	6 of 36	© TRG

ICS 203 - Organization Assignment List		Version Name: 203	
Incident Name: East Palestine Train Derailment 02032023		Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]	
Planning Section			
Planning Section Chief	Renninger, Steve - US EPA		
Deputy Planning Section Chief	Naranjo, Bryan - NS		
Deputy Planning Section Chief	Ruesch, Paul - US EPA		
Deputy Planning Section Chief	Dybsky, Natalie - FEMA		
Resource Unit Leader	Wawczak, Jeff - US EPA		
Deputy Resources Unit	Cassas, Robert - FEMA		
Situation Unit Leader	Martin, William - US EPA		
Deputy Situation Unit	Ramos, Miguel - FEMA		
Documentation Unit Leader	Terrell, Tina - US EPA		
Environmental Unit Leader	Kerr, Michelle - US EPA		
ICS Specialist	Carmichael, Leonard - TRG		
ICS Specialist	Popoff, David - TRG		
Field Observer	Kolek, Jeremy - TRG		
Logistics Section			
Logistics Section Chief	Borseth, Jeff - US EPA		
Deputy Logistics Section Chief	Clements, Steven - FEMA		
IT Support	Williams, Darnell		
Field Support	Snyder, Rob		
Virtual Support	Gulch, Jon - US EPA		
ICS 203 - Organization Assignment List		Prepared By Chris Sweeney, Updated 03/01/2023 18:59 EST UTC-5 PP	
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:18 EST UTC-5	7 of 36	© TRG

ICS 204 - Assignment List

Division: East Taggart NS

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - NS	Williams, Joseph	Norfolk Southern	Exemption 6 - PII	
Division/Group Supervisor	Gerard, Jordan	US EPA Region 4	404-562-8642	
Division/Group Supervisor	Deutsch, Scott	Norfolk Southern	Exemption 6 - PII	
Division/Group Supervisor	Skelton, Scott	CTEH	Exemption 6 - PII	
Division/Group Supervisor	OER	Ohio EPA		

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
SPSI	McCarty, Drew	10	Exemption 6 - PII	Tank Car Cleaning
HEPACO	Bryant, Justin	2	Exemption 6 - PII	Vac Truck work(1 vac truck)
Cronin	Cronin, Rob	8	Exemption 6 - PII	Magnet work/excavation on North Side behind Blaze Industries
Cranemaster	Mosqueda, Jesse	6	Exemption 6 - PII	Railcar shearing and scrap load out South side dirt work, site prep

Assignments

- 1) Continued heavy equipment work on north side for grading and excavation of site
- 2) South side will continue grading and lay down of primary and secondary soil containment using LLDPE for the load out of south side Main #1.
- 3) Continue to prep for track removal of South Main #1 - estimated begin upon UCG approval.
- 4) Remove track and excavate underlying soils consistent w/ approved workplan.
- 5) Continue potholing / storm sewer pipe investigation.

*Project has been ongoing and will involve noted objectives beginning 2-27-23.

Special Instructions

Work site air monitoring will dictate PPE.

ICS 204 - Assignment List

Group: Surface Water Sampling

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - NS	Williams, Joseph	Norfolk Southern	Exemption 6 - PII	
Site Remediation Branch Director	Kollar, Kurt	Ohio EPA	Exemption 6 - PII	
Site Remediation Branch Deputy Director	Cole, Jackie	US EPA R5	312-597-4421	
Site Remediation Branch Deputy Director	Hunt, Daniel	Norfolk Southern	4042734472	
Division/Group Supervisor	Hawkins, Jody	CTEH	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
Sampling Teams	Sharp, Tanner	8	Exemption 6 - PII	FOB

Assignments

- Water Quality Monitoring
- Surface Water Sample collection

Equipment:

- Horiba water quality meter
- Mobile data collection
- appropriate collection

Special Instructions

Report to Matthew Gernand, Steve Aufdenkampe
 Forward Operating Base (FOB): 40 South Market Street, East Palestine, OH

ICS 204 - Assignment List

Group: Waste Water Transfer NS

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - NS	Williams, Joseph	Norfolk Southern	Exemption 6 - PII	
Disposal Group Supervisor	Patten, David	Norfolk Southern	Exemption 6 - PII	
Disposal Group Supervisor	Vrabec, Adam	US EPA R5	312-448-3853	
Site Remediation Branch Deputy Director	DER			

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
CTEH	JT Wilson	1	Exemption 6 - PII	Air Monitoring
SPSI	Tom Wildman / Greg Palmer	4	Exemption 6 - PII	Waste Transfer

Assignments

- 1) Transfer liquid waste from tank trucks to tank cars using BMP as prescribed in AAR Pamphlet 34 tank car loading instructions.
- 2) Proper spill containment, contingency spill release equipment will be in place with proper manifest trailer for load out by NS to approved facilities.
- 3) Support transload to railcars at NS yard in Lordstown, OH.

Special Instructions

Work site air monitoring will dictate PPE.

ICS 204 - Assignment List

Group: Waste Water Truck Loading NS

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - NS	Maguire, Andrew	US EPA R5	312-758-8672	
Disposal Group Supervisor	Patten, David	Norfolk Southern	Exemption 6 - PII	
Disposal Group Supervisor	Vrbac, Adam			
Distribution Group Supervisor	Hood, Zach	USCG AST	Exemption 6 - PII	
Division/Group Supervisor	DERR-HEW			

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
SRS	Day, Chip	5	Exemption 6 - PII	
Arcadis/SPSI	Wetzel, Brain / Lindley, Josh	3	Exemption 6 - PII	Manifest Handling
Cronin	Cronin, Rob	4	Exemption 6 - PII	Frac-Tank off loading to truck for transit
Hepaco	Frazzini, Ted	4	Exemption 6 - PII	Frac-Tank off loading to truck for transit

Assignments

- 1) On-going downsize Mobile storage tank footprint on North side of site at Blaze Industries on South side of Taggart Rd.
- 2) Continue appropriate scheduling and trans-load of contaminated water to trucks for haul to appropriate and designated facility.
- 3) Manage load out of water from containment areas.
- 4) Follow traffic plans to and from loadout area(s).
- 5) Track and report daily volumes.

Special Instructions

Work-site air monitoring will dictate PPE

ICS 204 - Assignment List

Group: Solid Debris Loadout

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - NS	Williams, Joseph	Norfolk Southern	Exemption 6 - PII	
Site Remediation Branch Director	Kollar, Kurt	Ohio EPA	Exemption 6 - PII	
Site Remediation Branch Deputy Director	Cole, Jackie	US EPA R5	312-597-4421	
Site Remediation Branch Deputy Director	Hunt, Daniel	Norfolk Southern	4042734472	
Division/Group Supervisor	Shanks, Bryan	Norfolk Southern	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
SPSI	Drew McCarty	5	Exemption 6 - PII	Waste pile management and load up
Arcadis	Jay Reid	2	Exemption 6 - PII	Manifest handling
Green Rock	Craig Fisk / Chad Runnion	2	Exemption 6 - PII	Truck management / manifesting

Assignments

- 1) Ongoing load out of semi-trucks of impacted soils, segregated by profile and constituent impact.
- 2) Site is inclusive of contained truck wash and scaling operations. BMP's are in place to ensure minimized impact off pile.
- 3) In addition, during load out of acrylate impacted soils, strategic and targeted application of acrylate killer Acronel 27 and Acronel SS-30 to reduce odor accumulation at designation.
- 4) This will be performed on the pile not in the loaded truck and each SDS is available on request.

Special Instructions

Work site air monitoring will dictate PPE.

ICS 204 - Assignment List

Group: Surface Water / Sediment Quality NS

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief	Maguire, Andrew	US EPA R5	312-758-8672	
Site Remediation Branch Director	Kollar, Kurt	Ohio EPA	Exemption 6 - PII	
Site Remediation Branch Deputy Director	Cole, Jackie	US EPA R5	312-597-4421	
Site Remediation Branch Deputy Director	Hunt, Daniel	Norfolk Southern	4042734472	
Division/Group Supervisor	Williams, Nathan	Norfolk Southern	Exemption 6 - PII	
Division/Group Supervisor	Hunsicker, Chris	Norfolk Southern	Exemption 6 - PII	
Division/Group Supervisor	OER	Ohio EPA		

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
Hepaco	Ted Frazzini		Exemption 6 - PII	Leslie and Sulphur Run

Assignments

- 1) Ongoing aeration and sparging of Sulphur and Leslie Run from under track culvert to the backside of the East Palestine WWTP.
- 2) Continue to armor and assess location based on last rain fall event. Coordinate with OEPA for any proposed operational changes.
- 3) Day operations include cleaning inlets and outlets of pumps/aerators; Continue Sulphur Run and Leslie Run bank and bottom washing to remove and collect contaminates.
- 4) Night Operations include cleaning the inlets and outlets of pumps/aerators

Special Instructions

Work site air monitoring will dictate PPE.

ICS 204 - Assignment List

Group: Mobile Air Monitoring

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Division/Group Supervisor	Mickunas, Dave	US EPA	9195414191	
Division/Group Supervisor	Wilson, JT	CTEH	Exemption 6 - PII	
Division/Group Supervisor	Megan Combs			
Division/Group Supervisor	Edmunds, Jordan	Tetra Tech	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
START ST	Edmunds, Jordan	2	Exemption 6 - PII	FOB
US EPA TAGA ST	Mickunas, Dave	2	9195414191	FOB
US EPA PHILIS	Kaelin, Larry	1	7323216625	FOB
CTEH	Wilson, JT	1	Exemption 6 - PII	FOB

Assignments

- 1) Monitor at pre-established community locations per AMSP
- 2) Monitor locations near active waste loading area (Dustrak)
- 3) Collect data using Survey 123 form
- 4) Report exceedances immediately to OPS Section Chief
- 5) Plan for integration of TAGA operations during rail excavation
- 6) Integrate NS/CTEH monitoring into team
- 7) Provide daily summaries to J. Cashmere by 1800 (shift change)

Equipment: iPads, Dustrak, MultiRAE Pro monitors

Special Instructions

Use buddy system, high viz vests. Increased safety vigilance/awareness. Teams accompanied by law enforcement. Refer media inquires to JIC.

ICS 204 - Assignment List

Group: Stationary Air Monitoring/Sampling

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Division/Group Supervisor	Marks, Josh	USCG AST	Exemption 6 - PII	
Division/Group Supervisor	Giugliano, Claudio	USCG AST	Exemption 6 - PII	
Division/Group Supervisor	DeLong, Mike	Mannik Smith Group	Exemption 6 - PII	
Division/Group Supervisor	Wilson, JT	CTEH	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
USCG AST (Day)	Marks, Josh	2	Exemption 6 - PII	FOB
USCG AST (Night)	Giugliano, Claudio	2	Exemption 6 - PII	FOB

Assignments

- 1) Maintain 20 station network (equipment, VIPER connection, calibrations) on 24hr basis
- 2) Maintain new locations near active waste loading area (AreaRAE, Dustrak)
- 3) Report exceedances to OPS Section Chief
- 4) Collect daily (24hr) SUMMA canister at Leake Oil and upwind locations for analysis
- 5) Ensure security and integrity of equipment by routine visits to each location. Report tampering/vandalism to OPS Section Chief and 911.
- 6) Integrate NS/CTEH monitoring network into team
- 7) Provide daily summaries to OPS Section Chief by 1800 (shift change)

Equipment: AreaRAE Pros, SUMMA canisters, Dustrak, VIPER network equipment, MultiRAE Pros, Safer Suit Software

Special Instructions

Safety Issues: Follow COVID Protocols
 Be aware of traffic and trains near monitoring locations (use designated routes)
 Use the buddy system, wear high-viz vests
 Report any health concerns/issues to OPS Section Chief or SO
 Refer media inquiries to JIC

ICS 204 - Assignment List

Group: Residential Air Screening

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Division/Group Supervisor	Smerage, Talia	Mannik Smith Group	Exemption 6 - PII	
Division/Group Supervisor	Wilson, JT	CTEH	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
START	Smerage, Talia	2	Exemption 6 - PII	FOB
CTEH	Wilson, JT	2	Exemption 6 - PII	FOB
Columbiana Co Sheriff	TBD	1		FOB

Assignments

- 1) Obtain daily schedule for target homes.
- 2) Conduct indoor air screening at target residences per 'Home Safely' plan.
- 3) Collect data using Mobile Data Studio/Survey 123 software.
- 4) Report exceedances according to plan (Mark Dudle, NS).
- 5) Provide summary of findings form to resident upon completion.
- 6) Expand target residences to 1.15 mi radius from incident location (+150).
- 7) Provide daily summaries to OPS Section Chief by 1800.

Equipment:

SPM Flex (hydrogen chloride), Gastec (vinyl chloride if VOC detect), MultiRAE Pro, Drager XPID, colorimetric tubes

Special Instructions

Safety Issues:

Use buddy system, high viz vests. Increased safety vigilance/awareness. Teams accompanied by law enforcement. Refer media inquires to JIC.

ICS 204 - Assignment List

Group: Public Health

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Division/Group Supervisor	Shugart, Jill	CDC/ATSDR	Exemption 6 - PII	
Operations Section Chief - US EPA	Vins, Wesley	Columbiana Co HD	Exemption 6 - PII	
Division/Group Supervisor	Watkins, Sharon	PA DOH	Exemption 6 - PII	

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
Columbiana Co. Health Department	Vins, Wesley	2	Exemption 6 - PII	FOB
Ohio Dept. of Health	Himes, Lance	5	Exemption 6 - PII	FOB
Pennsylvania DOH	Watkins, Sharon	2	Exemption 6 - PII	FOB
CDC/ATSDR	Shugart, Jill	20	Exemption 6 - PII	FOB
US EPA R5	Fusinski, Keith	1	Exemption 6 - PII	FOB

Assignments

OH clinic @ 20 W. Martin St., E. Palestine, OH (phone: 234-564-7755 or 7888)
 PA Health Resource Center @ 3590 Darlington Rd, Darlington, PA

- PA Health Resource Center: Darlington Township Municipal Building, 3590 Darlington Rd, Darlington, PA 16115
- 1) Operate public health centers (OH clinic, PA health resource center)
 - 2) Conduct Assessment of Chemical Exposures 'ACE' investigation (OH, PA, 1st responders) survey administration
 - 3) Monitor community concerns and identify trend(s)
 - 4) Assist w/ messaging & materials for community clinics/health centers, Welcome Center, public meetings
 - 5) Coordinate with Community Task Force teams (6) – door to door canvassing
 - 6) Provide technical assistance/data to partner agencies
 - 7) Report activity summaries and coordinate w/ partners via 'daily sync' meeting

Special Instructions

COVID protocols, buddy system/accountability, local field escorts

ICS 204 - Assignment List

Group: Drinking Water

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Division/Group Supervisor	Harrison, Richard	ORSANCO	Exemption 6 - PII	
Division/Group Supervisor	Dinkins, Sam	ORSANCO	Exemption 6 - PII	
Division/Group Supervisor	Vins, Wesley	Columbiana Co HD	Exemption 6 - PII	
Drinking Water Supervisor	Ross, Katie	Stantec		

Assignments

- 1) Maintain 24hr fixed monitoring network on Ohio River, one site at increased. frequency at all monitoring locations down to Evansville, IN.
- 2) Advise local water utilities on status/sample results to ensure water supply safety.
- 3) Assist utility w/ daily sample taken at East Liverpool, OH station.
- 4) Continue providing daily updates for distribution.
- 5) Continue local monitoring groundwater samples (3 teams) (CCHD)
- 6) Incorporate NS sampling efforts.

Issue/Equipment: Provide resource needs to EPA. Systems calibrated for target chemicals.

Special Instructions

Provide resource needs to US EPA Operations Section Chief as soon as possible
Refer media inquiries to PIO/JIC

ICS 204 - Assignment List

Group: Pennsylvania Response

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Division/Group Supervisor	DiDonato, Ann	US EPA R3	215-287-8157	
Division/Group Supervisor	Moore, Brian	PA DEP	717-787-5715	

Assignments

- 1) Maintain list of resident inquiries/requests.
- 2) Conduct private well sampling w/ target area.
- 3) Continue investigation of particulate depositional area downwind of site (coordinate w/ ENVL on lab method).
- 4) Provide daily updates to OPS Section Chief.

Issues: Continue integrating PA DEP personnel.

Special Instructions

Follow COVID protocols
Refer media inquiries to PIO/JIC

ICS 204 - Assignment List

Group: Remediation

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Shift
Operations Section Chief - US EPA	Maguire, Andrew	US EPA R5	312-758-8672	
Disposal Group Supervisor	Kollar, Kurt	Ohio EPA	Exemption 6 - PII	
Division/Group Supervisor	Cole, Jackie	US EPA R5	312-597-4421	
Division/Group Supervisor	Hunt, Daniel	Norfolk Southern	4042734472	
Division/Group Supervisor	Witherspoon, Melissa	Ohio EPA		

Resources Assigned

Identifier	Leader	#	Contact Number(s)	Reporting Location, Instructions, Notes
Ohio EPA	Ballser, Wade	1	Exemption 6 - PII	FOB

Assignments

- 1) Oversee and direct response/mitigation/transportation & disposal efforts.
- 2) Conduct surface water/groundwater/public water system sampling.
- 3) Implement track removal/replacement plan in coordination w/ OEPA, ENVL once approved by UCG.

Special Instructions

Safety Issues:
 Follow COVID protocols
 Follow CTEH HASP on site
 Obtain Responsible Party/CTEH escort(s) prior to entering scene
 Report media inquiries to JIC

ICS 205a - Communications List

Version Name: Unified Command Group 03/01/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Dollhopf, Ralph	IC	Exemption 6 - PII		US EPA R5	dollhopf.ralph@epa.gov
Justice, James	Deputy IC			US EPA R5	justice.james@epa.gov
Wolfe, Steve	Deputy IC			US EPA R5	wolfe.stephen@epa.gov
Drabick, Keith	EP Fire Dept			E. Palestine FD	k.a.drabick@eastpalestine-oh.gov
Brown, James	EP Fire Dept			E. Palestine PD	j.c.brown@eastpalestine-oh.gov
Clark, Peggy	Columbiana Co EMA			Columbiana Co EMA	peggy.clark@ccoema.org
Boyle, John	FEPA R5			FEPA R5	john.boyle@fema.dhs.gov
DiDonato, Ann	USEPA R3			US EPA R3	didonato.ann@epa.gov
Shugart, Jill	CDC/ATSDR			CDC/ATSDR	ahe8@cdc.gov
Vogel, Anne	Ohio EPA			Ohio EPA	anne.vogel@epa.ohio.gov
Merick, Sima	Ohio EMA			Ohio EMA	smerick@dps.ohio.gov
Sigmon, Josh	Ohio EMA			Ohio EMA	jsigmon@dps.ohio.gov
Schoendorfer, David	NS			Norfolk Southern	david.schoendorfer@nscorp.com

ICS 205a - Communications List

Prepared By Lenny Carmichael, Updated 03/01/2023 17:32 EST UTC PP

ICS 205a - Communications List

Version Name: Command Staff 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Horvatin, Shanna	Safety Officer	Exemption 6 - PII		US EPA R5	horvatin.shanna@epa.gov
Skelton, Scott	Asst. Safety Officer			CTEH	sskelton@cteh.com
Borries, Sam	RIC			US EPA R5	borries.samuel@epa.gov
El-Zein, Jason	RIC			US EPA R5	el-zein@epa.gov
Short, Tom	RIC			US EPA R5	short.thomas@epa.gov
Saucedo, Alfred	RIC			US EPA R5	saucedo.alfred@epa.gov
Beckmann, Ronna	Liaison Officer			US EPA R5	beckmann.ronna@epa.gov
Clark, Kevin	Liaison Officer			US EPA R5	clark.kevin@epa.gov
Koller, Mark	Liaison Officer			US EPA R5	koller.mark@epa.gov
Cunningham, Maureen	Liaison Officer			FEMA R5	maureen.cunningham@fema.dhs.gov
Brewer, Eric	Agency Representative			Beaver Co EMA	ebrewer@beavercountypa.gov
Whipple, Kevin	Agency Representative			Beaver Co EMA	kwhipple@beavercountypa.gov
Rutledge, Brian	Agency Representative			Columbiana Co EMA	brian.rutledge@ccoema.org
Vins, Wesley	Agency Representative			Columbiana Co HD	wvins@columbiana-health.org
Dinkins, Sam	Agency Representative			ORSANCO	sdinkins@orsanco.org
Harrison, Richard	Agency Representative			ORSANCO	rharrison@orsanco.org
Vanderhoff, Bruce	Agency Representative			ODH	bruce.vanderhoff@odh.ohio.gov
Himes, Lance	Agency Representative			ODH	lance.himes@odh.ohio.gov
Williams, Miranda	Agency Representative		Ohio Dept of Health	miranda.williams@odh.ohio.gov	
McBride, Tamara	Agency Representative		ODH	tamara.mcbride@odh.ohio.gov	
Meadows, Nathan	Agency Representative		WV DEP	nathan.c.meadows@wv.gov	
Miller, Jim	Agency Representative		PA DEP	jamesmill@pa.gov	
Watkins, Sharon	Agency Representative		PA DOH	shawatkins@pa.gov	
Smith, Ryan	Agency Representative		PA DOA	ryanpsmith@pa.gov	
Remmert, Walter	Agency Representative		PA DOA	wremmert@pa.gov	
Padfield, Randy	Agency Representative		PA EMA	dpadfield@pa.gov	
Durno, Mark	RIC		EPA	durno.mark@epa.gov	
Tieney, Mary Ann	Agency Representative		FEMA		

ICS 205a - Communications List

Prepared By Lenny Carmichael, Updated 03/01/2023 18:54 EST UTC PP

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Poorman, Andrew	Asst. Safety Officer	Exemption 6 - PII		FEMA	andrew.poorman@fema.dhs.gov

ICS 205a - Communications List

Version Name: Operations 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Maguire, Andrew	Operations Section Chief	Exemption 6 - PII		US EPA R5	maguire.andrew@epa.gov
Edwards, Tricia	Deputy Operations Section Chief			US EPA R5	edwards.tricia@epa.gov
Ricketts, Darrin	Deputy Operations Section Chief			FEMA Region 5	darrin.ricketts@fema.dhs.gov
Williams, Joseph	Deputy Operations Section Chief			Norfolk Southern	joseph.Williams3@NSCorp.com
Cole, Jackie	Operations Section Support			US EPA R5	cole.jacquelyn@epa.gov
Cashmere, Jason	Operations Section Support			US EPA R5	cashmere.jason@epa.gov
Peters, Joshua	Operations Section Support			US EPA R5	peters.joshua@epa.gov
Hunt, Daniel	Deputy Operations Section Chief			Norfolk Southern	daniel.hunt@nscorp.com
Pohl, Eric	Operations Section Support			US EPA R5	poh.eric@epa.gov
Vrabec, Adam	Operations Section Support			US EPA R5	vrabec.adam@epa.gov
Kimble, Jeff	Operations Section Support			US EPA R5	kimble.jeffrey@epa.gov
Vega, Sonia	Operations Section Support			US EPA R5	vega.sonia@epa.gov
Rapone, Charles	Operations Section Support			US EPA R3	rapone.charles@epa.gov
Kelly, Brian	Operations Section Support			US EPA R5	kelly.brian@epa.gov
Morrison, Dave	Operations Section Support			US EPA R5	morrison.david@epa.gov
Mitchell, Jim	Operations Section Support			US EPA R5	mitchell.james@epa.gov
Holz, Theresa	Operations Section Support			ERRS-EQM	tholz@eqm.com
Bartos, Myles	Operations Section Support			US EPA R3	myles.bartos@epa.gov
Wagner, Christine	Operations Section Support			US EPA R3	wagner.christine@epa.gov
DeJesus-Vega, Miguel	Operations Section Support			USCG AST	miguel.a.dejesusvega@uscg.mil
Baynor, Rick	Operations Section Support		USCG AST	richard.w.baynor@uscg.mil	
Driscoll, Sean	Operations Section Support		USCG AST	sean.m.driscoll@uscg.mil	
Marks, Josh	Operations Section Support		USCG AST	joshua.d.marks@uscg.mil	
Giugliano, Claudio	Operations Section Support		USCG AST	claudio.g.giugliano@uscg.mil	
Hood, Zach	Operations Section Support		USCG AST	zachary.t.hood@uscg.mil	
Layton, Shane	Operations Section Support		USCG AST	shane.m.layton@uscg.mil	
Delgado, Paige	Operations Section Support		US EPA CMAT	delgado.paige@epa.gov	

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:35 E PP

ICS 205a - Communications List

Version Name: Operations 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Argenta, Edward	Operations Section Support	Exemption 6 - PII		US EPA CMAT	argenta.edward@epa.gov
Miller, Charles	Operations Section Support	Exemption 6 - PII		US EPA CMAT	miller.charles.t@epa.gov
Kaelin, Larry	Operations Section Support			US EPA	kaelin.lawrence@epa.gov
Ball, Gerald	Operations Section Support			US EPA ERT	ball.gerald@epa.gov
Mickunas, Dave	Operations Section Support			US EPA	mickunas.david@epa.gov
Gooch, James	Operations Section Support			CDC/ATSDR	igooch@cdc.gov
Caudill, Motria	Operations Section Support			CDC/ATSDR	caudill.motria@cdc.gov
Tremarelli, Maraia	Operations Section Support		780-723-4425	CDC/ATSDR	nmn1@cdc.gov
Dunn, Kevin	Operations Section Support			CDC/ATSDR	kgd8@cdc.gov
Johnson, Lona	Operations Section Chief			CDC/ATSDR	ijg@cdc.gov
Orr, Maureen	Operations Section Support			CDC/ATSDR	mco0@cdc.gov
Dewart, Courtney	Operations Section Support			CDC/ATSDR	phz4@cdc.gov
Goldsworthy, Lisa	Operations Section Support			CDC/ATSDR	pyn5@cdc.gov
Larson, Ted	Operations Section Support			CDC/ATSDR	thl3@cdc.gov
Dunn, Ian	Operations Section Support			CDC/ATSDR	lmq8@cdc.gov
Parasram, Vidisha	Operations Section Support			CDC/ATSDR	rix2@cdc.gov
Shi, Dallas	Operations Section Support			CDC/ATSDR	rhq9@cdc.gov
Garcia, Valerie Madera	Operations Section Support			CDC/ATSDR	nxj7@cdc.gov
Cornforth, Daniel	Operations Section Support			CDC/ATSDR	rio8@cdc.gov
Gichuhi, Besh	Operations Section Support			CDC/ATSDR	tqy7@cdc.gov
Burr, Kathryn	Operations Section Support			CDC/ATSDR	tqx6@cdc.gov
Crisp, Carolyn	Operations Section Support			CDC/ATSDR	tqy2@cdc.gov
Dulcey, Melissa	Operations Section Support			CDC/ATSDR	tqn2@cdc.gov
Michalek, Martha	Operations Section Support	Exemption 6 - PII		PA DEP	mmichalek@pa.gov
Moore, Brian	Operations Section Support			PA DEP	bmoore@pa.gov
Wilste, Daniel	Operations Section Support			Ohio EPA	
Gortner, Ed	Operations Section Support			Ohio EPA	ed.gortner@epa.ohio.gov
Eberle, Mike P	Operations Section Support			Ohio EPA	michael.eberle@epa.ohio.gov

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:35 E PP

ICS 205a - Communications List

Version Name: Operations 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Kollar, Kurt	Operations Section Support	Exemption 6 - PII		Ohio EPA	kurt.kollar@epa.ohio.gov
Balser, Wade	Operations Section Support			Ohio EPA	wade.balser@epa.ohio.gov
Witherspoon, Melissa	Operations Section Chief			Ohio EPA	melissa.witherspoon@epa.ohio.gov
Hurst, David	Operations Section Support			CST	david.a.hurst19.mil@army.mil
Cleary, Caeli	Operations Section Support			Tetra Tech	Caeli.cleary@tetratech.com
Grossman, Todd	Operations Section Support			Tetra Tech	TODD.GROSSMANN@tetratech.com
Schultz, Karl	Operations Section Support			Tetra Tech	karl.schultz@tetratech.com
Fusinski, Keith	Operations Section Support			US EPA R5	fusinski.keith@epa.gov
Grams, Dustin	Operations Section Support			Tetra Tech	dustin.grams@tetratech.com
Cooper, Katherine	Operations Section Support			Tetra Tech	katherine.cooper@tetratech.com
Peterca, Adam	Operations Section Support			Tetra Tech	adam.peterca@tetratech.com
Tierney, Aidan	Operations Section Support			Tetra Tech	aidan.tierney@tetratech.com
Nance, Gene	Operations Section Support			Tetra Tech	gene.nance@tetratech.com
Brennan, John	Operations Section Support			Tetra Tech	JOHN.BRENNAN@tetratech.com
Edmunds, Jordan	Operations Section Support			Tetra Tech	jordan.edmunds@tetratech.com
Myles, Kirsten	Operations Section Support			Tetra Tech	Kirsten.Myles@tetratech.com
Smith, Jessie	Operations Section Support		403-514-6543	Tetra Tech	Jessie.smith@tetratech.com
Enright, Alexis	Operations Section Support		540-878-8966	Tetra Tech	alexis.enright@tetratech.com
Davis, Brandi	Operations Section Support		256-352-7088	Tetra Tech	alexis.enright@tetratech.com
Renner, Cordell	Operations Section Support	604-444-6800	Tetra Tech	brandi.davis@tetratech.com	
Jay, Geoffrey	Operations Section Support		Tetra Tech	cordell.renner@tetratech.com	
Delong, Mike	Operations Section Support		Tetra Tech	GEOFFREY.JAY@tetratech.com	
Smerage, Talia	Operations Section Support		Mannik Smith Group	mdelong@manksmithgroup.com	
Currie, Ethan	Operations Section Support		Mannik Smith Group	Erika_Arthur@murphyoilcorp.com	
Wilson, JT	Operations Section Support		CTEH	jason.artrip@arcadis.com	
Fenske, Jacob	Operations Section Support		CTEH	farvizu@omies.com	
Ross, Katie	Operations Section Support		CTEH	jfenske@cteh.com	
Bialosky, Don	Operations Section Support		Stantec		
Blaser, Matthew	Operations Section Support		PA DEP	dbialosky@pa.gov	
	Operations Section Support		US EPA R5	blaser.matthew@epa.gov	

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:35 E PP

ICS 205a - Communications List

Version Name: Operations 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email	
Bryant, Mike	Operations Section Support	Exemption 6 - PII		US EPA R5	bryant.michael@epa.gov	
Gelder, Mary	Operations Section Support			US EPA R5	gelder.mary@epa.gov	
Miller, Kristina	Operations Section Support		281-476-2430		US EPA R5	miller.kristina@epa.gov
Bellamy, Amber	Operations Section Support				US FWS	amber_bellamy@fws.gov
Conway, Mayor Trent	Operations Section Support				City of Palestine FD	
Treker, Jennifer	Operations Section Support				Columbiana Deputy Sheriff	steven.aufdenkampe@nscorp.com
Dixit, Naeha	Operations Section Support				US EPA R5	dixit.naeha@epa.gov
Cahn, Jeff	Operations Section Support				US EPA R5	cahn.jeff@epa.gov
Kirby-Miles, Leslie	Operations Section Support				US EPA R5	kirby-miles.leslie@epa.gov
Tony, Moore	Operations Section Support				US EPA R3	moore.tony@epa.gov
Darby, Valincia	Operations Section Support		403-514-6551		US DOI	valincia_darby@ios.doi.gov
Nelson, John	Operations Section Support				US DOI	john_nelson@ios.doi.gov
Millsap, Deborah	Operations Section Support				US FWS	deborah_millsap@fws.gov
Williams, Lisa	Operations Section Support				US FWS	lisa_williams@fws.gov
Santiago, Cindy	Operations Section Support			US EPA R3	santiago.cindy@epa.gov	
Eberts, Howie	Operations Section Support			OSHA	eberts.howard@dol.gov	
Murphy, Eddie	Operations Section Support			DOT PHMSA	eddie.murphy@dot.gov	
Meckfessel, Dwight	Operations Section Support			DOT PHMSA	dwright.meckfessel@dot.gov	

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:35 E PP

ICS 205a - Communications List

Version Name: Planning 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Renninger, Steve	Planning Section Chief	Exemption 6 - PII		US EPA R5	renninger.steven@epa.gov
Dybsky, Natalie	Deputy Planning Section Chief			FEMA Region 5	natalie.dybsky@fema.dhs.gov
Ruesch, Paul	Deputy Planning Section Chief			EPA	Ruesch.Paul@EPA.gov
Naranjo, Bryan	Deputy Planning Section Chief			Norfolk Southern	Bryan.Naranjo@NSCorp.com
Turner, Janien	Situation Unit Leader			US EPA R5	turner.janien@epa.gov
Martin, William	Situation Unit Leader			US EPA R3	martin.william@epa.gov
Wawczak, Jeff	Resource Unit Leader			US EPA R5	wawczak.jeffrey@epa.gov
Cassas, Robert	Resource Unit			US EPA R5	robert.cassas@fema.dhs.gov
Nilisen, Ashley	Data Unit Leader			US EPA R3	nilisen.ashley@epa.gov
Sewell, Jason	Data Unit Leader			Environmental Protection Agency - Chicago	sewell.jason@epa.gov
Bumba, Lauren	Data Unit			US EPA R5	bumba.lauren@epa.gov
Kerr, Michelle	Environmental Unit Leader			US EPA R5	kerr.michelle@epa.gov
Terrell, Tina	Documentation Unit Leader			US EPA R5	terrell.tina@epa.gov
Thomas, Saphique	EJ Coordinator			US EPA R5	thomas.saphique@epa.gov
Ramos, Miguel	Situation Unit			FEMA Region 5	miguel.ramos@fema.dhs.gov
Stargel, Alison	Documentation Unit			US EPA R5	kna8@cdc.gov

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:36 E PP

ICS 205a - Communications List

Version Name: Logistics 3/1/23

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Wilson, Darnell	Info Technology Support	Exemption 6 - PII		US EPA R5	wilson.darnell@epa.gov
Borseth, Jeff	Logistics Section Chief			US EPA R5	borseth.jeffrey@epa.gov
Gulch, Jon	Logistics Section Chief			US EPA R5	gulch.jon@epa.gov
Snyder, Robert	Deputy Logistics Section Chief			US EPA R5	snyder.robert@epa.gov
Clements, Steven	Deputy Logistics Section Chief			FEMA Region 5	steven.clements@fema.dhs.gov
Poma, Bill	Info Technology Support			ERRS-EQM	bpoma@eqm.com

ICS 205a - Communications List

Prepared By Leonard Carmichael Jr., Updated 03/01/2023 17:34 E PP

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

Local Communications Information

Name	Incident Assigned Position	Mobile Phone	Work Phone	Organization	Email
Hackley, Rick	Finance Section Chief	Exemption 6 - PII		US EPA R5	hackley.richard@epa.gov
Krieger, Geoffrey	Deputy Finance Section Chief	Exemption 6 - PII		US EPA R5	krieger.geoffrey@epa.gov

ICS 206 - Medical Plan				Version Name: 02/26/2023 15:22:36				
Incident Name: East Palestine Train Derailment 02032023				Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]				
Medical Aid Stations								
<i>Name</i>	<i>Location</i>	<i>Paramedic On Site</i>	<i>Phone</i>			<i>Radio</i>		
AED & First Kit (UC Command Post)	42083 SR 344 Columbiana, Oh 40.886987, -80.7060647	<input type="checkbox"/>						
Transportation (Ground and/or Air Ambulance Services)								
<i>Ambulance Service</i>	<i>Location</i>	<i>Phone</i>	<i>Radio</i>	<i>Air</i>	<i>ALS</i>			
Local 911 Services				<input type="checkbox"/>	<input type="checkbox"/>			
Hospitals								
<i>Hospital</i>	<i>Location</i>	<i>Phone</i>	<i>Radio</i>	<i>Air Travel Time</i>	<i>Ground Travel Time</i>	<i>Trauma Center</i>	<i>Helipad</i>	<i>Burn Center</i>
Ellwood City Medical Center	724 Pershing Street Ellwood City, PA 16117 40.869907, -80.274498	724-752-0081		12 min	35 min	II	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MH St Elizabeth Boardman Hospital	8401 Market Street Boardman, OH 44512 40.995335, -80.662743	330-729-2929		9 min	25 min	II	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Salem Regional Medical Center	1995 East State Street Salem, OH 44460 40.900944, -80.832359	330-332-1551		10 min	30 min	II	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UPMC Mercy	1400 Locust Street Pittsburgh, PA 15219 40.436141, -79.985596	412-232-8111		20 min	1 hr	I	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Special Medical Emergency Procedures								
<p>EMERGENCY MEDICAL PROCEDURES</p> <p>In the event of a medical emergency provide the following information to the Communications Unit.</p> <ol style="list-style-type: none"> 1. Declare the nature of the emergency. <ul style="list-style-type: none"> ◦ Medical injury/illness? ◦ If injury/illness, is it Life Threatening? 2. If Life Threatening, then request that the designated frequency be cleared for emergency traffic. 3. Identify the on-scene Point of Contact (POC) by Resource and Last name. 4. Identify nature of incident, number injured, patient assessment(s) and location (geographic and GPS coordinates). 5. Identify on-scene medical personnel by position and name. 6. Identify preferred method of patient transport. 7. Request any additional resources and/or equipment needed. 8. Document all information received and transmitted on the radio or phone. 9. Identify any changes in the on-scene Point of Contact or medical personnel as they occur. 								
ICS 206 - Medical Plan				Prepared By Chris Sweeney, Updated 03/01/2023 14:17 EST UTC-5 PP				
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:19 EST UTC-5	31 of 36			© TRG			

East Palestine Train Derailment
 ICS 207 – Organization Chart
 02 Mar 0700 to 04 Mar 0700
 Date: 01 Mar 2023

Community Engagement / JIC Coordination
 Mark Durno, EPA 5
 Saphique Thomas, EPA 5

Unified Command Group
 Ralph Dollhopf, EPA 5
 Ann Didonato, EPA 3
 Chief Keith Drabick, Village of East Palestine
 Peggy Clark, Columbiana Co EMA
 John Boyle, FEMA
 Jill Shugart, CDC/ATSDR
 Anne Vogel, Mike Eberle Ohio EPA
 Sima Merick, Ohio EMA
 David Schoendorf, NS

Cooperating/Assisting Agencies
 Dr. Bruce Vanderhoff, Lance Himes, ODH
 Wesley Vins, Columbiana Co HD
 Richard Harrison, Sam Dinkins, ORSANCO
 Brian Moore, Jim Miller, PA DEP
 Eric Brewer, Kevin Whipple, Beaver Co EMA
 Randy Padfield, PEMA
 Sharon Watkins, Julie Miller, PA DOH
 Walter Remmert, PA DOA
 Nate Meadows, WV DEP

Joint Information Center
 Allison Lippert, EPA 5
 See ICS 205a

Safety Officer
 Shanna Horvatin, EPA 5 (v)
 Scott Skelton, NS

Data Support Coordinator
 Jason Sewell, EPA 5 (v)
 Ashley Nilsen, EPA 3 (v)

R5 EOC
 Michael Bryant (v)

Liaison Officer
 Mark Koller, EPA 5 (v)
 Ronna Beckmann, EPA 5 (v)
 Maureen Cunningham, FEMA 5 (v)

Scientific Support Coordinator
 James Justice, EPA 5

Operations Section
 Andy Maguire, EPA 5
 Brian Kelly, EPA 5 (Deputy)
 Joe Williams, NS (Deputy)

See OPS Org Chart

ICS Support
 Chris Sweeney, TRG PSC
 David Popoff, TRG UC
 Sean Sullivan, TRG LSC

Planning Section
 Steve Renninger, EPA 5
 Paul Ruesch, EPA 5 (v) (Deputy)
 Bryan Naranjo, NS (Deputy)
 Natalie Dybsky, FEMA 5 (Deputy)

Finance Section
 Rick Hackley, EPA 5 (v)
 Geoff Krieger, EPA 5 (v) (Deputy)

Logistics Section
 Jeff Borseth, EPA 5
 Jon Gulch, EPA 5 (v)
 Serdar Ertep, EPA 4
 Steve Clements, FEMA 5 (Deputy)

Situation Unit
 Janien Turner, EPA 5
 Miguel Ramos, FEMA 5

Resource Unit
 Jeff Wawczak, EPA 5 (v)

Data Management Unit
 Lauren Bumba, R5 (v)

GIS Unit
 Eric Holbus, EPA 5 (v)

Environmental Unit
 Michelle Kerr, EPA 5 (v)
 Larisa Leonova, EPA 5 (v) (Deputy)

Documentation Unit
 Tina Terrell, EPA 4 (v)

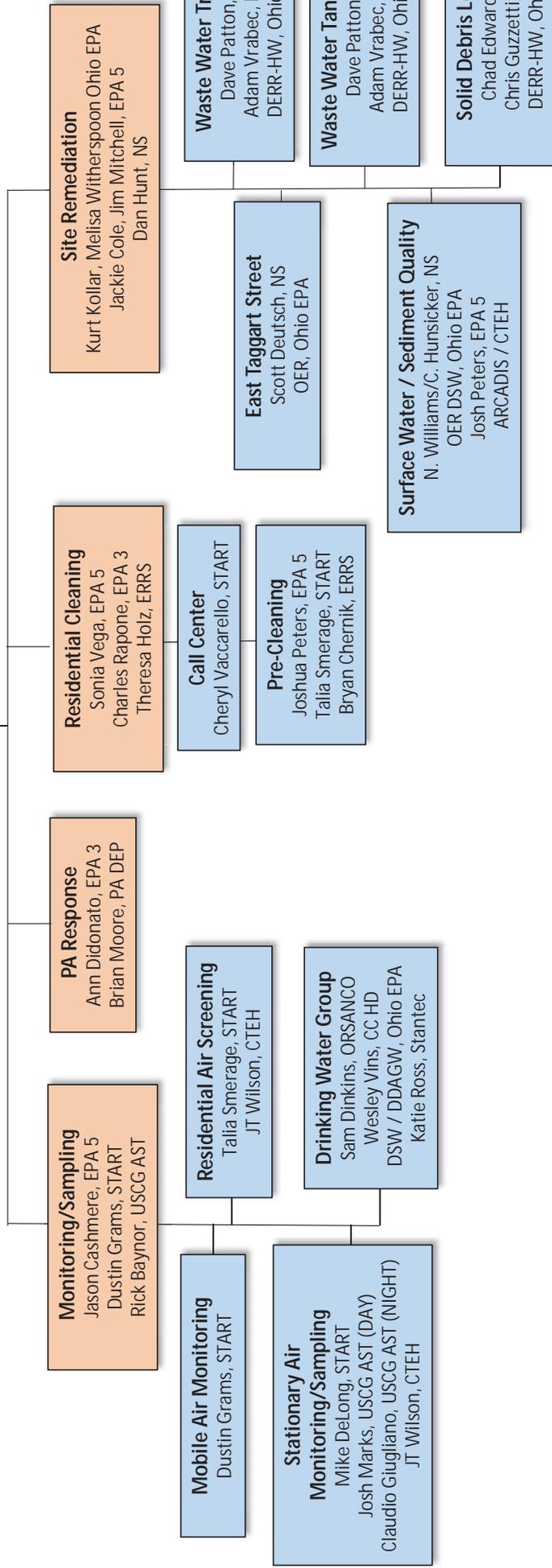
Facilities
 Bill Poma, EOM
 Rob Snyder, EPA 5

IT Unit
 Darnell Wilson, IT Support

East Palestine Train Derailment
 ICS 207 – Organization Chart
 02 Mar 0700 to 04 Mar 0700
 Date: 01 Mar 2023

Operations Section
 Andy Maguire, EPA 5
 Brian Kelly, EPA 5
 Joe Williams, NS (Deputy)
 Darrin Ricketts, FEMA 5

Public Health Unit
 Wesley Vins, Columbiana Co HD
 Lance Himes, ODH
 Sharon Watkins, PA DOH
 Jill Shugart, CDC/ATSDR
 Keith Fusinski, EPA 5



ICS 223 - Health and Safety Message	Version Name: 02/27/2023 07:12:01		
Incident Name: East Palestine Train Derailment 02032023	Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]		
Major Hazards and Risks			
Narrative			
<ul style="list-style-type: none"> • Report any safety, health, and security concerns to SO, supervisor, OPS chief, and law enforcement if necessary. • Report any exposure related symptoms due to working in/near contaminants as soon as possible to SO or Supervisor. Visit the Public Health Unit clinics to report even mild symptoms (i.e., headaches) • All field workers must attend the daily safety brief/check-in and verify when field work is concluded. • Maintain vigilance and awareness of work area, location in the community, especially within the vicinity of the derailment site (hot zone). • If entering the controlled access zone on foot be sure to decon prior to leaving to reduce contaminated soil/material from being tracked out. • Increased truck traffic should follow site traffic plan. • If on foot, be mindful of vehicles at all times and stay within designated areas. • Follow the HASP and JHAs which detail each task being performed with associated risk analysis. • Use proper PPE for assigned task: • Required- supportive boots/shoes/steel toes, gloves, safety vest/logo gear. • Observe caution when driving especially in early/late hours. • Maintain situational awareness and respect and site safety measures. • Use the 'buddy system' at all times. • Get sufficient rest and take breaks as needed to manage fatigue. • Take proper precaution, safety measures and proper PPE to be donned before using any chemicals/standards. • Use the Covid symptom checker at: https://www.cdc.gov/screening/. If you have symptoms, it is recommended to isolate (go back to home or hotel room) and test for COVID-19. • Dial 911 for all emergencies. 			
ICS 223 - Health and Safety Message		Prepared By Chris Sweeney, Updated 03/01/2023 17:50 EST UTC-5 PP	
INCIDENT ACTION PLAN SOFTWARE™	Printed 03/01/2023 23:19 EST UTC-5	34 of 36	© TRG

ICS 230 - Daily Meeting Schedule

Incident Name: East Palestine Train Derailment 02032023

Period: Period 6 [03/02/2023 07:00 - 03/04/2023 07:00]

<i>Meeting Name & Date/Time</i>	<i>Purpose</i>	<i>Attendees</i>	<i>Location</i>
Operations Briefing - Incident Command Post 02/28/2023 07:30	Present the IAP to the Operations Section oncoming shift supervisors and other Command & General Staff personnel.	Facilitator: Planning Section Chief (PSC), Operations Section Chief, Safety Officer, START	ICP - 40 Market Street, East Palestine
Unified Command Meeting 02/28/2023 08:00	General Discussion	AA/CA, PSC, UC	
Command & General Staff Meeting 02/28/2023 09:30	Provide opportunity for IC/UC to present decisions and management direction to the Command & General Staff members.	Facilitator: Planning Section Chief (PSC), AA/CA, C&G, EOC, UC	
Special Meeting: Environmental (External) 02/28/2023 12:00	INVITATION ONLY		
Tactics Meeting 03/01/2023 11:00	Create tactical operations plan for the next operational period to meet IC/UC objectives.	Facilitator: Planning Section Chief (PSC), Data Specialist, Environmental Unit Leader, GIS Specialist, Logistics Section Chief, Operations Section Chief, Planning Section Chief, Resource Unit Leader, Safety Officer, Situation Unit Leader	
Planning Meeting 03/01/2023 16:00	Describe strategies and tactical plan to achieve IC/UC's direction, priorities and objectives for the next operational period.	Facilitator: Planning Section Chief (PSC), AA/CA, EOC, Finance Section Chief, Liaison Officer, Logistics Section Chief, Operations Section Chief, Planning Section Chief, Public Information Officer, Resource Unit Leader, Safety Officer, Situation Unit Leader, UC	

ICS 230 - Daily Meeting Schedule

Printed 03/01/2023 23:19 EST UTC-5

35 of 36

Prepared By Chris Sweeney, Updated 02/27/2023 07:45 EST UTC-5 PP

© TRG

1. Incident Name:		2. Operational Period: (Date / Time)		DAILY MEETING/ CONFERENCE CALL SCHEDULE ICS 230 - EPA
EP Derailment 02032023		From: 03/02/2023 0700 To: 03/04/2023 0700		
3. Meeting Schedule				
Date/ Time	Meeting Name	Purpose	Attendees	Location
Daily 0730 EST	Operations Briefing	Present Operations Plan (IAP) to supervisors of tactical resources	OPS/SO/START	40 S. Market Street, East Palestine
Daily 0800 EST	Unified Command (UC) Meeting	General Discussion	UC, PSC	Exemption 6 - PII
Daily 0930 EST	Command & General Staff (C&GS) Meeting	Coordinate command staff functions, responsibilities, and objectives	UC/C&GS/EOC/AA/CA	
M-W-F 1100 EST	Tactics Meeting	Operations develops primary & alternative strategies to accomplish objectives for next OP	OPS/PSC/SO/RESL/SITL/LSC/ENVL/DATA/GIS	
M-W-F 1600 EST	Planning Meeting	Present proposed objectives, strategies, tactics & resources need for next OP; discuss & resolve issues/concerns; commit to support plan	UC/PSC/SO/PIO/LNO/OPS/LSC/FSC/SITL/EOC/AA/CA	
4. Special and Other Meetings:				
Daily 1200 EST	Environmental Meeting (External)			
Daily 1600 EST	Joint Press Conference			FEMA YouTube Livestream
5. Prepared by: (PSC)			(Date / Time)	
Name: P. Ruesch, EPA 5		Signature: PR		03/01/2023 1500
DAILY MEETING SCHEDULE				ICS 230 - EPA (Rev 02/10)

Appendix B

Waste Profiles and Approvals



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/23/2023 3:19:01 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180588-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/23/2023 3:19:01 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	16
Surrogate Summary	62
QC Sample Results	67
QC Association Summary	87
Lab Chronicle	94
Certification Summary	101
Chain of Custody	103
Receipt Checklists	107
Isotope Dilution Summary	108

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Job ID: 240-180588-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180588-1

Comments

No additional comments.

Receipt

The samples were received on 2/17/2023 9:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.6° C and 5.5° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563073 was outside the method criteria for the following analyte: Carbon Disulfide. An MRL standard at or below the reporting limit (RL) was analyzed with the affected samples: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), (CCVIS 240-563073/3), (LCS 240-562767/2-A) and (MB 240-562767/1-A) and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8260D: An MS/MSD was done in preparation batch 240-562767 and analytical batch 240-563073 however it was reported in a different analytical batch. The affected samples are WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8) and WC-WS1-A8 (4-5) (240-180588-9).

Method 8260D: The method blank for preparation batch 240-562767 and analytical batch 240-563073 contained Acetone above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated samples: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), (LCS 240-562767/2-A) and (MB 240-562767/1-A) were not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260D: The MS/MSD for preparation batch 240-562767 and analytical batch 240-563092 is not reported because it was analyzed in another batch.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563092 was outside the method criteria for the following analyte: Carbon disulfide. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), WC-WS1-A9 (3-4) (240-180588-10), WC-WS1-A10 (2-3) (240-180588-11), (240-180588-G-11-B MS) and (240-180588-G-11-C MSD). Elevated reporting limits (RLs) are provided.

Method 8270E: The laboratory control sample (LCS) for preparation batch 240-562526 and analytical batch 240-562828 recovered outside control limits for the following analyte: Atrazine. This analyte was biased high in the LCS and was not detected in the associated samples: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), WC-WS1-A9 (3-4) (240-180588-10) and WC-WS1-A10 (2-3) (240-180588-11); therefore, the data have been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-562828 recovered above the upper control limit for

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Job ID: 240-180588-1 (Continued)

Laboratory: Eurofins Canton (Continued)

2-Nitrophenol. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), WC-WS1-A9 (3-4) (240-180588-10) and WC-WS1-A10 (2-3) (240-180588-11).

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-562828 recovered outside acceptance criteria, low biased, for bis (2-chloroisopropyl) ether, 4-Nitrophenol, Benzaldehyde and Bis(2-chloroethyl)ether. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples: WC-WS1-A1 (2-3) (240-180588-1), WC-WS1-A2 (2.5-3.5) (240-180588-2), WC-WS1-A3 (3-4) (240-180588-3), WC-WS1-A4 (5-6) (240-180588-4), WC-WS1-A5 (1-2) (240-180588-5), WC-WS1-A6 (3-4) (240-180588-7), WC-WS1-A7 (2-3) (240-180588-8), WC-WS1-A8 (4-5) (240-180588-9), WC-WS1-A9 (3-4) (240-180588-10) and WC-WS1-A10 (2-3) (240-180588-11) were non-detect for the analytes, the data has been reported.

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-WS1-COMP (A1-A5) (240-180588-6), WC-WS1-COMP (A6-A10) (240-180588-12) and (240-180588-A-6-G MS). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-WS1-COMP (A1-A5) (240-180588-6) and WC-WS1-COMP (A6-A10) (240-180588-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency
 None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

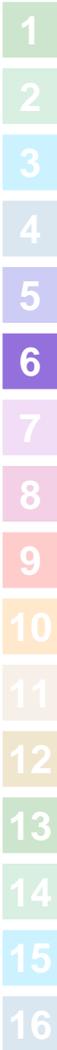
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180588-1	WC-WS1-A1 (2-3)	Solid	02/17/23 14:47	02/17/23 21:00
240-180588-2	WC-WS1-A2 (2.5-3.5)	Solid	02/17/23 14:57	02/17/23 21:00
240-180588-3	WC-WS1-A3 (3-4)	Solid	02/17/23 15:10	02/17/23 21:00
240-180588-4	WC-WS1-A4 (5-6)	Solid	02/17/23 15:27	02/17/23 21:00
240-180588-5	WC-WS1-A5 (1-2)	Solid	02/17/23 15:37	02/17/23 21:00
240-180588-6	WC-WS1-COMP (A1-A5)	Solid	02/17/23 00:00	02/17/23 21:00
240-180588-7	WC-WS1-A6 (3-4)	Solid	02/17/23 16:17	02/17/23 21:00
240-180588-8	WC-WS1-A7 (2-3)	Solid	02/17/23 16:27	02/17/23 21:00
240-180588-9	WC-WS1-A8 (4-5)	Solid	02/17/23 16:37	02/17/23 21:00
240-180588-10	WC-WS1-A9 (3-4)	Solid	02/17/23 16:43	02/17/23 21:00
240-180588-11	WC-WS1-A10 (2-3)	Solid	02/17/23 16:51	02/17/23 21:00
240-180588-12	WC-WS1-COMP (A6-A10)	Solid	02/17/23 00:00	02/17/23 21:00



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	62	J B	230	57	mg/Kg	200	✳	8260D	Total/NA
Vinyl chloride	0.72		0.29	0.14	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.43	J	1.3	0.43	mg/Kg	20	✳	8270E	Total/NA
2-Methylnaphthalene	5.3		0.38	0.050	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.23	J	0.38	0.073	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.33	J	0.38	0.10	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.36	J	0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.86		0.38	0.087	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.70		0.38	0.24	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.5		0.38	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.63		0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.36	J	0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Chrysene	1.3		0.38	0.038	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.2	J	1.3	0.33	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.6		0.38	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.21	J	0.38	0.070	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.55		0.38	0.19	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	3.4		0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.4		0.38	0.057	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.5		0.38	0.054	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0062	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.48	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	26	J B	95	23	mg/Kg	100	✳	8260D	Total/NA
Vinyl chloride	26		24	12	mg/Kg	100	✳	8260D	Total/NA
2-Methylnaphthalene	2.9		0.35	0.046	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.21	J	0.35	0.068	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.24	J	0.35	0.095	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.26	J	0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.54		0.35	0.081	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.41		0.35	0.22	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.69		0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.37		0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.27	J	0.35	0.16	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.79		0.35	0.035	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.90	J	1.2	0.31	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.0		0.35	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.22	J	0.35	0.065	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.27	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.8		0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.1		0.35	0.053	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.90		0.35	0.051	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0054	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.32	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0010	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.013	J B	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	37	J B	140	34	mg/Kg	125	✱	8260D	Total/NA
Vinyl chloride	54		1.4	0.69	mg/Kg	5	✱	8260D	Total/NA
2-Methylnaphthalene	2.4		0.37	0.048	mg/Kg	20	✱	8270E	Total/NA
Acenaphthene	0.27	J	0.37	0.070	mg/Kg	20	✱	8270E	Total/NA
Acenaphthylene	0.25	J	0.37	0.098	mg/Kg	20	✱	8270E	Total/NA
Anthracene	0.32	J	0.37	0.059	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]anthracene	0.50		0.37	0.084	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]pyrene	0.35	J	0.37	0.23	mg/Kg	20	✱	8270E	Total/NA
Benzo[b]fluoranthene	0.57		0.37	0.16	mg/Kg	20	✱	8270E	Total/NA
Benzo[g,h,i]perylene	0.31	J	0.37	0.17	mg/Kg	20	✱	8270E	Total/NA
Benzo[k]fluoranthene	0.25	J	0.37	0.17	mg/Kg	20	✱	8270E	Total/NA
Chrysene	0.72		0.37	0.036	mg/Kg	20	✱	8270E	Total/NA
Dibenzofuran	0.66	J	1.2	0.32	mg/Kg	20	✱	8270E	Total/NA
Fluoranthene	1.1		0.37	0.11	mg/Kg	20	✱	8270E	Total/NA
Fluorene	0.34	J	0.37	0.067	mg/Kg	20	✱	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.25	J	0.37	0.18	mg/Kg	20	✱	8270E	Total/NA
Naphthalene	1.9		0.37	0.059	mg/Kg	20	✱	8270E	Total/NA
Phenanthrene	1.9		0.37	0.055	mg/Kg	20	✱	8270E	Total/NA
Pyrene	0.98		0.37	0.052	mg/Kg	20	✱	8270E	Total/NA
Arsenic	0.0060	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.38	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00078	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	84	J B	330	81	mg/Kg	333.333	✱	8260D	Total/NA
Vinyl chloride	23		0.25	0.12	mg/Kg	1	✱	8260D	Total/NA
2-Methylnaphthalene	2.4		0.35	0.046	mg/Kg	20	✱	8270E	Total/NA
Acenaphthene	0.35		0.35	0.067	mg/Kg	20	✱	8270E	Total/NA
Acenaphthylene	0.30	J	0.35	0.094	mg/Kg	20	✱	8270E	Total/NA
Anthracene	0.49		0.35	0.057	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]anthracene	0.65		0.35	0.080	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]pyrene	0.38		0.35	0.22	mg/Kg	20	✱	8270E	Total/NA
Benzo[b]fluoranthene	0.71		0.35	0.15	mg/Kg	20	✱	8270E	Total/NA
Benzo[g,h,i]perylene	0.30	J	0.35	0.17	mg/Kg	20	✱	8270E	Total/NA
Benzo[k]fluoranthene	0.22	J	0.35	0.16	mg/Kg	20	✱	8270E	Total/NA
Chrysene	0.87		0.35	0.035	mg/Kg	20	✱	8270E	Total/NA
Dibenzofuran	0.79	J	1.2	0.31	mg/Kg	20	✱	8270E	Total/NA
Fluoranthene	1.9		0.35	0.10	mg/Kg	20	✱	8270E	Total/NA
Fluorene	0.42		0.35	0.064	mg/Kg	20	✱	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.23	J	0.35	0.17	mg/Kg	20	✱	8270E	Total/NA
Naphthalene	1.8		0.35	0.057	mg/Kg	20	✱	8270E	Total/NA
Phenanthrene	2.7		0.35	0.052	mg/Kg	20	✱	8270E	Total/NA
Pyrene	1.4		0.35	0.050	mg/Kg	20	✱	8270E	Total/NA
Arsenic	0.0046	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.40	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00094	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	65	J B	230	56	mg/Kg	200	✱	8260D	Total/NA
Vinyl chloride	3.2		0.29	0.14	mg/Kg	1	✱	8260D	Total/NA
2-Methylnaphthalene	2.6		0.35	0.046	mg/Kg	20	✱	8270E	Total/NA
Acenaphthene	0.52		0.35	0.067	mg/Kg	20	✱	8270E	Total/NA
Acenaphthylene	0.23	J	0.35	0.094	mg/Kg	20	✱	8270E	Total/NA
Anthracene	0.56		0.35	0.056	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]anthracene	0.84		0.35	0.080	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]pyrene	0.57		0.35	0.22	mg/Kg	20	✱	8270E	Total/NA
Benzo[b]fluoranthene	0.95		0.35	0.15	mg/Kg	20	✱	8270E	Total/NA
Benzo[g,h,i]perylene	0.43		0.35	0.17	mg/Kg	20	✱	8270E	Total/NA
Benzo[k]fluoranthene	0.33	J	0.35	0.16	mg/Kg	20	✱	8270E	Total/NA
Chrysene	1.1		0.35	0.035	mg/Kg	20	✱	8270E	Total/NA
Dibenzofuran	0.88	J	1.2	0.30	mg/Kg	20	✱	8270E	Total/NA
Fluoranthene	2.2		0.35	0.10	mg/Kg	20	✱	8270E	Total/NA
Fluorene	0.50		0.35	0.064	mg/Kg	20	✱	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.37		0.35	0.17	mg/Kg	20	✱	8270E	Total/NA
Naphthalene	1.8		0.35	0.056	mg/Kg	20	✱	8270E	Total/NA
Phenanthrene	2.8		0.35	0.052	mg/Kg	20	✱	8270E	Total/NA
Pyrene	1.7		0.35	0.050	mg/Kg	20	✱	8270E	Total/NA
Arsenic	0.0071	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.52	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00066	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.011	J	0.025	0.00042	mg/L	1		8260D	TCLP
Vinyl chloride	0.28		0.025	0.00045	mg/L	1		8260D	TCLP
Perfluorooctanoic acid	0.36	J	0.68	0.23	ng/g	1	✱	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.44	J	0.68	0.23	ng/g	1	✱	537 IDA	Total/NA

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	3.1		0.26	0.13	mg/Kg	1	✱	8260D	Total/NA
2-Methylnaphthalene	2.4		0.35	0.045	mg/Kg	20	✱	8270E	Total/NA
Acenaphthene	0.36		0.35	0.066	mg/Kg	20	✱	8270E	Total/NA
Acenaphthylene	0.21	J	0.35	0.093	mg/Kg	20	✱	8270E	Total/NA
Anthracene	0.48		0.35	0.056	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]anthracene	0.83		0.35	0.079	mg/Kg	20	✱	8270E	Total/NA
Benzo[a]pyrene	0.56		0.35	0.22	mg/Kg	20	✱	8270E	Total/NA
Benzo[b]fluoranthene	1.0		0.35	0.15	mg/Kg	20	✱	8270E	Total/NA
Benzo[g,h,i]perylene	0.42		0.35	0.16	mg/Kg	20	✱	8270E	Total/NA
Benzo[k]fluoranthene	0.23	J	0.35	0.16	mg/Kg	20	✱	8270E	Total/NA
Chrysene	1.1		0.35	0.035	mg/Kg	20	✱	8270E	Total/NA
Dibenzofuran	0.73	J	1.2	0.30	mg/Kg	20	✱	8270E	Total/NA
Fluoranthene	2.1		0.35	0.10	mg/Kg	20	✱	8270E	Total/NA
Fluorene	0.37		0.35	0.064	mg/Kg	20	✱	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.33	J	0.35	0.17	mg/Kg	20	✱	8270E	Total/NA
Naphthalene	1.7		0.35	0.056	mg/Kg	20	✱	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A6 (3-4) (Continued)

Lab Sample ID: 240-180588-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	2.3		0.35	0.052	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.6		0.35	0.050	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0054	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.50	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.014	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	83	J B	340	83	mg/Kg	333.333	✳	8260D	Total/NA
Vinyl chloride	42		1.0	0.50	mg/Kg	4	✳	8260D	Total/NA
2-Methylnaphthalene	3.0		0.35	0.046	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.42		0.35	0.067	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.44		0.35	0.094	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.53		0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.83		0.35	0.080	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.48		0.35	0.22	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.97		0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.39		0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.22	J	0.35	0.16	mg/Kg	20	✳	8270E	Total/NA
Chrysene	1.1		0.35	0.035	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.88	J	1.2	0.31	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.2		0.35	0.10	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.44		0.35	0.064	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.34	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.5		0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.6		0.35	0.052	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.7		0.35	0.050	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0062	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.40	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0010	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	96	J B	350	85	mg/Kg	333.333	✳	8260D	Total/NA
Vinyl chloride	20		0.26	0.13	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	3.6		0.37	0.048	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.25	J	0.37	0.071	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.24	J	0.37	0.099	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.24	J	0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.52		0.37	0.084	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.34	J	0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.50		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.24	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.20	J	0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.67		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.98	J	1.2	0.32	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A8 (4-5) (Continued)

Lab Sample ID: 240-180588-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	0.99		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.27	J	0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.20	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.7		0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.0		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.88		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0057	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.36	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00087	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.013	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00063	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17	J B	68	17	mg/Kg	66.6666	✳	8260D	Total/NA
Vinyl chloride	19		0.26	0.13	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	3.4		0.37	0.048	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.45		0.37	0.071	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.44		0.37	0.099	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.55		0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.99		0.37	0.084	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.63		0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.48		0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.41		0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	1.3		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.1	J	1.2	0.32	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.4		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.51		0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.42		0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.8		0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	3.1		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.8		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0047	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.63	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00093	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17	J B	49	12	mg/Kg	40	✳	8260D	Total/NA
Vinyl chloride	1.3	F1	0.30	0.15	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	5.0		0.38	0.049	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.15	J	0.38	0.072	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.22	J	0.38	0.10	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.22	J	0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.60		0.38	0.086	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.49		0.38	0.24	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.77		0.38	0.16	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A10 (2-3) (Continued)

Lab Sample ID: 240-180588-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[g,h,i]perylene	0.44		0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.28	J	0.38	0.17	mg/Kg	20	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	1.9	F1	1.8	1.3	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.95		0.38	0.038	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.3		1.3	0.33	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.86		0.38	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.16	J	0.38	0.069	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.34	J	0.38	0.19	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	3.1	F1	0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.4	F1	0.38	0.056	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.84		0.38	0.054	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0055	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.40	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00077	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J B	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.017	J	0.025	0.00042	mg/L	1		8260D	TCLP
Vinyl chloride	0.83		0.025	0.00045	mg/L	1		8260D	TCLP
Perfluorooctanoic acid	0.32	J	0.69	0.23	ng/g	1	✳	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.36	J	0.69	0.23	ng/g	1	✳	537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		59	18	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,1,2,2-Tetrachloroethane	ND		59	35	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		59	16	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,1,2-Trichloroethane	ND		59	13	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,1-Dichloroethane	ND		59	11	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,1-Dichloroethene	ND		59	19	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,2,4-Trichlorobenzene	ND		59	31	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,2-Dibromo-3-Chloropropane	ND		120	52	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Ethylene Dibromide	ND		59	19	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,2-Dichlorobenzene	ND		59	28	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,2-Dichloroethane	ND		59	11	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,2-Dichloropropane	ND		59	8.7	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,3-Dichlorobenzene	ND		59	11	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
1,4-Dichlorobenzene	ND		59	13	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
2-Butanone (MEK)	ND		230	37	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
2-Hexanone	ND		230	62	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
4-Methyl-2-pentanone (MIBK)	ND		230	56	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Acetone	62	J B	230	57	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Benzene	ND		59	9.9	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Dichlorobromomethane	ND		59	14	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Bromoform	ND		59	54	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Bromomethane	ND		59	39	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Carbon disulfide	ND		59	25	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Carbon tetrachloride	ND		59	24	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Chlorobenzene	ND		59	8.2	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Chloroethane	ND		59	35	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Chloroform	ND		59	13	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Chloromethane	ND		59	16	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
cis-1,2-Dichloroethene	ND		59	9.4	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
cis-1,3-Dichloropropene	ND		59	29	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Cyclohexane	ND		120	38	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Chlorodibromomethane	ND		59	27	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Dichlorodifluoromethane	ND		59	12	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Ethylbenzene	ND		59	11	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Isopropylbenzene	ND		59	8.9	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Methyl acetate	ND		290	39	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Methyl tert-butyl ether	ND		59	8.7	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Methylcyclohexane	ND		120	16	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Methylene Chloride	ND		120	90	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Styrene	ND		59	12	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Tetrachloroethene	ND		59	23	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Toluene	ND		59	56	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
trans-1,2-Dichloroethene	ND		59	15	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
trans-1,3-Dichloropropene	ND		59	25	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Trichloroethene	ND		59	34	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Trichlorofluoromethane	ND		59	32	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200
Vinyl chloride	0.72		0.29	0.14	mg/Kg	✱	02/20/23 14:17	02/23/23 10:35	1
Xylenes, Total	ND		120	21	mg/Kg	✱	02/20/23 14:17	02/23/23 11:22	200

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/20/23 14:17	02/23/23 10:35	1
Toluene-d8 (Surr)	108		56 - 125	02/20/23 14:17	02/23/23 11:22	200
Dibromofluoromethane (Surr)	85		41 - 138	02/20/23 14:17	02/23/23 10:35	1
Dibromofluoromethane (Surr)	100		41 - 138	02/20/23 14:17	02/23/23 11:22	200
4-Bromofluorobenzene (Surr)	95		41 - 143	02/20/23 14:17	02/23/23 10:35	1
4-Bromofluorobenzene (Surr)	108		41 - 143	02/20/23 14:17	02/23/23 11:22	200
1,2-Dichloroethane-d4 (Surr)	96		58 - 125	02/20/23 14:17	02/23/23 10:35	1
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/20/23 14:17	02/23/23 11:22	200

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.43	J	1.3	0.43	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4,5-Trichlorophenol	ND		3.8	1.8	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4,6-Trichlorophenol	ND		3.8	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4-Dichlorophenol	ND		3.8	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4-Dimethylphenol	ND		3.8	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4-Dinitrophenol	ND		8.4	3.6	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,4-Dinitrotoluene	ND		5.1	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2,6-Dinitrotoluene	ND		5.1	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Chlorophenol	ND		1.3	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Methylnaphthalene	5.3		0.38	0.050	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Methylphenol	ND		5.1	0.79	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Nitroaniline	ND		5.1	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
2-Nitrophenol	ND		1.3	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
3-Nitroaniline	ND		5.1	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4,6-Dinitro-2-methylphenol	ND		8.4	2.0	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Chloro-3-methylphenol	ND		3.8	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Chloroaniline	ND		3.8	0.76	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Nitroaniline	ND		5.1	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
4-Nitrophenol	ND		8.4	2.4	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Acenaphthene	0.23	J	0.38	0.073	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Acenaphthylene	0.33	J	0.38	0.10	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Acetophenone	ND		2.5	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Anthracene	0.36	J	0.38	0.061	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Atrazine	ND	+	5.1	0.91	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzaldehyde	ND		2.5	0.58	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzo[a]anthracene	0.86		0.38	0.087	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzo[a]pyrene	0.70		0.38	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzo[b]fluoranthene	1.5		0.38	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzo[g,h,i]perylene	0.63		0.38	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Benzo[k]fluoranthene	0.36	J	0.38	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Butyl benzyl phthalate	ND		1.8	0.56	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.4	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Carbazole	ND		1.3	0.48	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Chrysene	1.3		0.38	0.038	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Dibenz(a,h)anthracene	ND		0.38	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Dibenzofuran	1.2 J		1.3	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Diethyl phthalate	ND		1.8	0.79	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Dimethyl phthalate	ND		1.8	0.36	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Di-n-octyl phthalate	ND		1.8	0.71	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Fluoranthene	1.6		0.38	0.11	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Fluorene	0.21 J		0.38	0.070	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Hexachlorobenzene	ND		0.38	0.072	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Hexachlorobutadiene	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Hexachlorocyclopentadiene	ND		8.4	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Indeno[1,2,3-cd]pyrene	0.55		0.38	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Isophorone	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
N-Nitrosodiphenylamine	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Naphthalene	3.4		0.38	0.061	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Nitrobenzene	ND		2.5	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Pentachlorophenol	ND		3.8	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Phenanthrene	2.4		0.38	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Phenol	ND		1.3	0.20	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
Pyrene	1.5		0.38	0.054	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20
3 & 4 Methylphenol	ND		10	0.74	mg/Kg	☼	02/18/23 10:21	02/21/23 11:50	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	79		46 - 137	02/18/23 10:21	02/21/23 11:50	20
Phenol-d5 (Surr)	66		26 - 120	02/18/23 10:21	02/21/23 11:50	20
Nitrobenzene-d5 (Surr)	53		25 - 120	02/18/23 10:21	02/21/23 11:50	20
2-Fluorophenol (Surr)	64		20 - 120	02/18/23 10:21	02/21/23 11:50	20
2-Fluorobiphenyl (Surr)	77		34 - 120	02/18/23 10:21	02/21/23 11:50	20
2,4,6-Tribromophenol (Surr)	125	S1+	10 - 120	02/18/23 10:21	02/21/23 11:50	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0062	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 11:57	1
Barium	0.48	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 11:57	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 11:57	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 11:57	1
Lead	0.012	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 11:57	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 11:57	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 11:57	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:25	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.4		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	21.6		0.1	0.1	%			02/18/23 10:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		24	7.4	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,1,2,2-Tetrachloroethane	ND		24	14	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		24	6.4	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,1,2-Trichloroethane	ND		24	5.4	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,1-Dichloroethane	ND		24	4.6	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,1-Dichloroethene	ND		24	7.8	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,2,4-Trichlorobenzene	ND		24	13	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,2-Dibromo-3-Chloropropane	ND		48	21	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Ethylene Dibromide	ND		24	7.5	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,2-Dichlorobenzene	ND		24	11	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,2-Dichloroethane	ND		24	4.5	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,2-Dichloropropane	ND		24	3.5	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,3-Dichlorobenzene	ND		24	4.4	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
1,4-Dichlorobenzene	ND		24	5.2	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
2-Butanone (MEK)	ND		95	15	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
2-Hexanone	ND		95	25	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
4-Methyl-2-pentanone (MIBK)	ND		95	23	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Acetone	26	J B	95	23	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Benzene	ND		24	4.0	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Dichlorobromomethane	ND		24	5.8	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Bromoform	ND		24	22	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Bromomethane	ND		24	16	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Carbon disulfide	ND		24	10	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Carbon tetrachloride	ND		24	9.7	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Chlorobenzene	ND		24	3.3	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Chloroethane	ND		24	14	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Chloroform	ND		24	5.1	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Chloromethane	ND		24	6.3	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
cis-1,2-Dichloroethene	ND		24	3.8	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
cis-1,3-Dichloropropene	ND		24	12	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Cyclohexane	ND		48	16	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Chlorodibromomethane	ND		24	11	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Dichlorodifluoromethane	ND		24	5.0	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Ethylbenzene	ND		24	4.5	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Isopropylbenzene	ND		24	3.6	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Methyl acetate	ND		120	16	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Methyl tert-butyl ether	ND		24	3.5	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Methylcyclohexane	ND		48	6.3	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Methylene Chloride	ND		48	36	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Styrene	ND		24	4.9	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Tetrachloroethene	ND		24	9.2	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Toluene	ND		24	23	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
trans-1,2-Dichloroethene	ND		24	5.9	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
trans-1,3-Dichloropropene	ND		24	10	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Trichloroethene	ND		24	14	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Trichlorofluoromethane	ND		24	13	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Vinyl chloride	26		24	12	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100
Xylenes, Total	ND		48	8.7	mg/Kg	✱	02/20/23 14:17	02/23/23 00:01	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/20/23 14:17	02/23/23 00:01	100
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 11:00	1
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 11:48	200
Dibromofluoromethane (Surr)	101		41 - 138	02/20/23 14:17	02/23/23 00:01	100
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 14:17	02/23/23 11:00	1
Dibromofluoromethane (Surr)	101		41 - 138	02/20/23 14:17	02/23/23 11:48	200
4-Bromofluorobenzene (Surr)	104		41 - 143	02/20/23 14:17	02/23/23 00:01	100
4-Bromofluorobenzene (Surr)	95		41 - 143	02/20/23 14:17	02/23/23 11:00	1
4-Bromofluorobenzene (Surr)	108		41 - 143	02/20/23 14:17	02/23/23 11:48	200
1,2-Dichloroethane-d4 (Surr)	104		58 - 125	02/20/23 14:17	02/23/23 00:01	100
1,2-Dichloroethane-d4 (Surr)	95		58 - 125	02/20/23 14:17	02/23/23 11:00	1
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/20/23 14:17	02/23/23 11:48	200

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4-Dimethylphenol	ND		3.5	0.95	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4-Dinitrophenol	ND		7.8	3.4	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Methylnaphthalene	2.9		0.35	0.046	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Nitroaniline	ND		4.7	0.95	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
3,3'-Dichlorobenzidine	ND		2.4	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4,6-Dinitro-2-methylphenol	ND		7.8	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Chloroaniline	ND		3.5	0.71	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
4-Nitrophenol	ND		7.8	2.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Acenaphthene	0.21	J	0.35	0.068	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Acenaphthylene	0.24	J	0.35	0.095	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Acetophenone	ND		2.4	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Anthracene	0.26	J	0.35	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Atrazine	ND	*+	4.7	0.85	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzaldehyde	ND		2.4	0.54	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzo[a]anthracene	0.54		0.35	0.081	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzo[a]pyrene	0.41		0.35	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzo[b]fluoranthene	0.69		0.35	0.15	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzo[g,h,i]perylene	0.37		0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Benzo[k]fluoranthene	0.27	J	0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		2.4	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Bis(2-chloroethyl)ether	ND		2.4	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Butyl benzyl phthalate	ND		1.7	0.52	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Caprolactam	ND		7.8	1.8	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Carbazole	ND		1.2	0.45	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Chrysene	0.79		0.35	0.035	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Dibenzofuran	0.90	J	1.2	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Diethyl phthalate	ND		1.7	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Dimethyl phthalate	ND		1.7	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Di-n-octyl phthalate	ND		1.7	0.66	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Fluoranthene	1.0		0.35	0.11	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Fluorene	0.22	J	0.35	0.065	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Hexachlorocyclopentadiene	ND		7.8	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Indeno[1,2,3-cd]pyrene	0.27	J	0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Isophorone	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Naphthalene	1.8		0.35	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Nitrobenzene	ND		2.4	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Phenanthrene	2.1		0.35	0.053	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Phenol	ND		1.2	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
Pyrene	0.90		0.35	0.051	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20
3 & 4 Methylphenol	ND		9.5	0.69	mg/Kg	☼	02/18/23 10:21	02/21/23 12:15	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	84		46 - 137	02/18/23 10:21	02/21/23 12:15	20
Phenol-d5 (Surr)	68		26 - 120	02/18/23 10:21	02/21/23 12:15	20
Nitrobenzene-d5 (Surr)	54		25 - 120	02/18/23 10:21	02/21/23 12:15	20
2-Fluorophenol (Surr)	57		20 - 120	02/18/23 10:21	02/21/23 12:15	20
2-Fluorobiphenyl (Surr)	76		34 - 120	02/18/23 10:21	02/21/23 12:15	20
2,4,6-Tribromophenol (Surr)	126	S1+	10 - 120	02/18/23 10:21	02/21/23 12:15	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 12:39	1
Barium	0.32	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 12:39	1
Cadmium	0.0010	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 12:39	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 12:39	1
Lead	0.013	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 12:39	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 12:39	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 12:39	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.5		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	15.5		0.1	0.1	%			02/18/23 10:23	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		35	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,1,2,2-Tetrachloroethane	ND		35	21	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		35	9.4	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,1,2-Trichloroethane	ND		35	8.0	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,1-Dichloroethane	ND		35	6.8	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,1-Dichloroethene	ND		35	12	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,2,4-Trichlorobenzene	ND		35	19	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,2-Dibromo-3-Chloropropane	ND		70	31	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Ethylene Dibromide	ND		35	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,2-Dichlorobenzene	ND		35	17	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,2-Dichloroethane	ND		35	6.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,2-Dichloropropane	ND		35	5.2	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,3-Dichlorobenzene	ND		35	6.5	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
1,4-Dichlorobenzene	ND		35	7.7	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
2-Butanone (MEK)	ND		140	22	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
2-Hexanone	ND		140	37	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
4-Methyl-2-pentanone (MIBK)	ND		140	34	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Acetone	37	J B	140	34	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Benzene	ND		35	5.9	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Dichlorobromomethane	ND		35	8.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Bromoform	ND		35	32	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Bromomethane	ND		35	23	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Carbon disulfide	ND		35	15	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Carbon tetrachloride	ND		35	14	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Chlorobenzene	ND		35	4.9	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Chloroethane	ND		35	21	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Chloroform	ND		35	7.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Chloromethane	ND		35	9.3	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
cis-1,2-Dichloroethene	ND		35	5.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
cis-1,3-Dichloropropene	ND		35	17	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Cyclohexane	ND		70	23	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Chlorodibromomethane	ND		35	16	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Dichlorodifluoromethane	ND		35	7.5	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Ethylbenzene	ND		35	6.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Isopropylbenzene	ND		35	5.4	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Methyl acetate	ND		180	24	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Methyl tert-butyl ether	ND		35	5.2	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Methylcyclohexane	ND		70	9.3	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Methylene Chloride	ND		70	54	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Styrene	ND		35	7.3	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Tetrachloroethene	ND		35	14	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Toluene	ND		35	34	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
trans-1,2-Dichloroethene	ND		35	8.7	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
trans-1,3-Dichloropropene	ND		35	15	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Trichloroethene	ND		35	20	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Trichlorofluoromethane	ND		35	19	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125
Vinyl chloride	54		1.4	0.69	mg/Kg	✱	02/20/23 14:17	02/23/23 16:22	5
Xylenes, Total	ND		70	13	mg/Kg	✱	02/20/23 14:17	02/23/23 12:13	125

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 12:13	125
Toluene-d8 (Surr)	103		56 - 125	02/20/23 14:17	02/23/23 16:22	5
Dibromofluoromethane (Surr)	101		41 - 138	02/20/23 14:17	02/23/23 12:13	125
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 14:17	02/23/23 16:22	5
4-Bromofluorobenzene (Surr)	108		41 - 143	02/20/23 14:17	02/23/23 12:13	125
4-Bromofluorobenzene (Surr)	101		41 - 143	02/20/23 14:17	02/23/23 16:22	5
1,2-Dichloroethane-d4 (Surr)	112		58 - 125	02/20/23 14:17	02/23/23 12:13	125
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/20/23 14:17	02/23/23 16:22	5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4-Dimethylphenol	ND		3.7	0.98	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4-Dinitrophenol	ND		8.1	3.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,4-Dinitrotoluene	ND		4.9	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2,6-Dinitrotoluene	ND		4.9	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Chloronaphthalene	ND		1.2	0.34	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Methylnaphthalene	0.24		0.37	0.048	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Methylphenol	ND		4.9	0.76	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Nitroaniline	ND		4.9	0.98	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
3,3'-Dichlorobenzidine	ND		2.4	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
3-Nitroaniline	ND		4.9	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4,6-Dinitro-2-methylphenol	ND		8.1	2.0	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Bromophenyl phenyl ether	ND		1.2	0.34	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Chloroaniline	ND		3.7	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Chlorophenyl phenyl ether	ND		1.2	0.34	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Nitroaniline	ND		4.9	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
4-Nitrophenol	ND		8.1	2.3	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Acenaphthene	0.27	J	0.37	0.070	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Acenaphthylene	0.25	J	0.37	0.098	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Acetophenone	ND		2.4	0.27	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Anthracene	0.32	J	0.37	0.059	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Atrazine	ND	+	4.9	0.88	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzaldehyde	ND		2.4	0.56	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzo[a]anthracene	0.50		0.37	0.084	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzo[a]pyrene	0.35	J	0.37	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzo[b]fluoranthene	0.57		0.37	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzo[g,h,i]perylene	0.31	J	0.37	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Benzo[k]fluoranthene	0.25	J	0.37	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Bis(2-chloroethoxy)methane	ND		2.4	0.29	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Bis(2-chloroethyl)ether	ND		2.4	0.29	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Butyl benzyl phthalate	ND		1.7	0.54	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.1	1.8	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Carbazole	ND		1.2	0.47	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Chrysene	0.72		0.37	0.036	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Dibenzofuran	0.66	J	1.2	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Diethyl phthalate	ND		1.7	0.76	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Dimethyl phthalate	ND		1.7	0.34	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Di-n-octyl phthalate	ND		1.7	0.69	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Fluoranthene	1.1		0.37	0.11	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Fluorene	0.34	J	0.37	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Hexachlorobenzene	ND		0.37	0.070	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Hexachlorobutadiene	ND		1.2	0.29	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Hexachlorocyclopentadiene	ND		8.1	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Indeno[1,2,3-cd]pyrene	0.25	J	0.37	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Isophorone	ND		1.2	0.29	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
N-Nitrosodiphenylamine	ND		1.2	0.29	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Naphthalene	1.9		0.37	0.059	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Nitrobenzene	ND		2.4	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Phenanthrene	1.9		0.37	0.055	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Phenol	ND		1.2	0.20	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
Pyrene	0.98		0.37	0.052	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20
3 & 4 Methylphenol	ND		9.8	0.71	mg/Kg	☼	02/18/23 10:21	02/21/23 12:39	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	57		46 - 137	02/18/23 10:21	02/21/23 12:39	20
Phenol-d5 (Surr)	53		26 - 120	02/18/23 10:21	02/21/23 12:39	20
Nitrobenzene-d5 (Surr)	42		25 - 120	02/18/23 10:21	02/21/23 12:39	20
2-Fluorophenol (Surr)	48		20 - 120	02/18/23 10:21	02/21/23 12:39	20
2-Fluorobiphenyl (Surr)	57		34 - 120	02/18/23 10:21	02/21/23 12:39	20
2,4,6-Tribromophenol (Surr)	89		10 - 120	02/18/23 10:21	02/21/23 12:39	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0060	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 12:44	1
Barium	0.38	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 12:44	1
Cadmium	0.00078	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 12:44	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 12:44	1
Lead	0.012	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 12:44	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 12:44	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 12:44	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:35	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.2		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	18.8		0.1	0.1	%			02/18/23 10:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		83	26	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,1,2,2-Tetrachloroethane	ND		83	50	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		83	22	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,1,2-Trichloroethane	ND		83	19	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,1-Dichloroethane	ND		83	16	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,1-Dichloroethene	ND		83	27	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2,4-Trichlorobenzene	ND		83	44	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2-Dibromo-3-Chloropropane	ND		170	74	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Ethylene Dibromide	ND		83	26	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2-Dichlorobenzene	ND		83	40	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2-Dichloroethane	ND		83	16	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2-Dichloropropane	ND		83	12	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,3-Dichlorobenzene	ND		83	15	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
1,4-Dichlorobenzene	ND		83	18	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
2-Butanone (MEK)	ND		330	52	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
2-Hexanone	ND		330	88	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
4-Methyl-2-pentanone (MIBK)	ND		330	79	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Acetone	84	J B	330	81	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Benzene	ND		83	14	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Dichlorobromomethane	ND		83	20	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Bromoform	ND		83	76	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Bromomethane	ND		83	55	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Carbon disulfide	ND		83	36	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Carbon tetrachloride	ND		83	34	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Chlorobenzene	ND		83	12	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Chloroethane	ND		83	50	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Chloroform	ND		83	18	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3
Chloromethane	ND		83	22	mg/Kg	✱	02/20/23 14:17	02/23/23 00:51	333.333 3

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		83	13	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
cis-1,3-Dichloropropene	ND		83	41	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Cyclohexane	ND		170	54	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Chlorodibromomethane	ND		83	39	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Dichlorodifluoromethane	ND		83	18	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Ethylbenzene	ND		83	16	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Isopropylbenzene	ND		83	13	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Methyl acetate	ND		420	56	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Methyl tert-butyl ether	ND		83	12	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Methylcyclohexane	ND		170	22	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Methylene Chloride	ND		170	130	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Styrene	ND		83	17	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Tetrachloroethene	ND		83	32	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Toluene	ND		83	80	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
trans-1,2-Dichloroethene	ND		83	21	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
trans-1,3-Dichloropropene	ND		83	35	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Trichloroethene	ND		83	48	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Trichlorofluoromethane	ND		83	46	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3
Vinyl chloride	23		0.25	0.12	mg/Kg	☼	02/20/23 14:17	02/23/23 11:53	1
Xylenes, Total	ND		170	30	mg/Kg	☼	02/20/23 14:17	02/23/23 00:51	333.333 3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/20/23 14:17	02/23/23 00:51	333.333 3
Toluene-d8 (Surr)	105		56 - 125	02/20/23 14:17	02/23/23 11:53	1
Dibromofluoromethane (Surr)	102		41 - 138	02/20/23 14:17	02/23/23 00:51	333.333 3
Dibromofluoromethane (Surr)	90		41 - 138	02/20/23 14:17	02/23/23 11:53	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/20/23 14:17	02/23/23 00:51	333.333 3
4-Bromofluorobenzene (Surr)	96		41 - 143	02/20/23 14:17	02/23/23 11:53	1
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/20/23 14:17	02/23/23 00:51	333.333 3
1,2-Dichloroethane-d4 (Surr)	97		58 - 125	02/20/23 14:17	02/23/23 11:53	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4-Dinitrophenol	ND		7.8	3.3	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Methylnaphthalene	2.4		0.35	0.046	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Nitroaniline	ND		4.7	0.94	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
3,3'-Dichlorobenzidine	ND		2.4	1.0	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4,6-Dinitro-2-methylphenol	ND		7.8	1.9	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Chloroaniline	ND		3.5	0.71	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
4-Nitrophenol	ND		7.8	2.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Acenaphthene	0.35		0.35	0.067	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Acenaphthylene	0.30 J		0.35	0.094	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Acetophenone	ND		2.4	0.26	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Anthracene	0.49		0.35	0.057	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Atrazine	ND	*+	4.7	0.85	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzaldehyde	ND		2.4	0.54	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzo[a]anthracene	0.65		0.35	0.080	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzo[a]pyrene	0.38		0.35	0.22	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzo[b]fluoranthene	0.71		0.35	0.15	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzo[g,h,i]perylene	0.30 J		0.35	0.17	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Benzo[k]fluoranthene	0.22 J		0.35	0.16	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Bis(2-chloroethoxy)methane	ND		2.4	0.28	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Bis(2-chloroethyl)ether	ND		2.4	0.28	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Caprolactam	ND		7.8	1.8	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Carbazole	ND		1.2	0.45	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Chrysene	0.87		0.35	0.035	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Dibenzofuran	0.79 J		1.2	0.31	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Diethyl phthalate	ND		1.6	0.73	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20
Fluoranthene	1.9		0.35	0.10	mg/Kg	✱	02/18/23 10:21	02/21/23 13:03	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	0.42		0.35	0.064	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Hexachlorocyclopentadiene	ND		7.8	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Indeno[1,2,3-cd]pyrene	0.23	J	0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Isophorone	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Naphthalene	1.8		0.35	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Nitrobenzene	ND		2.4	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Phenanthrene	2.7		0.35	0.052	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Phenol	ND		1.2	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
Pyrene	1.4		0.35	0.050	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg	☼	02/18/23 10:21	02/21/23 13:03	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		46 - 137	02/18/23 10:21	02/21/23 13:03	20
Phenol-d5 (Surr)	60		26 - 120	02/18/23 10:21	02/21/23 13:03	20
Nitrobenzene-d5 (Surr)	49		25 - 120	02/18/23 10:21	02/21/23 13:03	20
2-Fluorophenol (Surr)	56		20 - 120	02/18/23 10:21	02/21/23 13:03	20
2-Fluorobiphenyl (Surr)	67		34 - 120	02/18/23 10:21	02/21/23 13:03	20
2,4,6-Tribromophenol (Surr)	106		10 - 120	02/18/23 10:21	02/21/23 13:03	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0046	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 12:48	1
Barium	0.40	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 12:48	1
Cadmium	0.00094	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 12:48	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 12:48	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 12:48	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 12:48	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 12:48	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.5		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	15.5		0.1	0.1	%			02/18/23 10:23	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		58	18	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,1,2,2-Tetrachloroethane	ND		58	35	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		58	15	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,1,2-Trichloroethane	ND		58	13	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,1-Dichloroethane	ND		58	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,1-Dichloroethene	ND		58	19	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,2,4-Trichlorobenzene	ND		58	31	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,2-Dibromo-3-Chloropropane	ND		120	51	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Ethylene Dibromide	ND		58	18	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,2-Dichlorobenzene	ND		58	28	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,2-Dichloroethane	ND		58	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,2-Dichloropropane	ND		58	8.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,3-Dichlorobenzene	ND		58	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
1,4-Dichlorobenzene	ND		58	13	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
2-Butanone (MEK)	ND		230	36	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
2-Hexanone	ND		230	61	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
4-Methyl-2-pentanone (MIBK)	ND		230	55	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Acetone	65	J B	230	56	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Benzene	ND		58	9.7	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Dichlorobromomethane	ND		58	14	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Bromoform	ND		58	53	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Bromomethane	ND		58	38	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Carbon disulfide	ND		58	25	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Carbon tetrachloride	ND		58	24	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Chlorobenzene	ND		58	8.1	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Chloroethane	ND		58	35	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Chloroform	ND		58	12	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Chloromethane	ND		58	15	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
cis-1,2-Dichloroethene	ND		58	9.2	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
cis-1,3-Dichloropropene	ND		58	29	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Cyclohexane	ND		120	38	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Chlorodibromomethane	ND		58	27	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Dichlorodifluoromethane	ND		58	12	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Ethylbenzene	ND		58	11	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Isopropylbenzene	ND		58	8.8	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Methyl acetate	ND		290	39	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Methyl tert-butyl ether	ND		58	8.6	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Methylcyclohexane	ND		120	15	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Methylene Chloride	ND		120	89	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Styrene	ND		58	12	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Tetrachloroethene	ND		58	22	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Toluene	ND		58	55	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
trans-1,2-Dichloroethene	ND		58	14	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
trans-1,3-Dichloropropene	ND		58	24	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Trichloroethene	ND		58	33	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Trichlorofluoromethane	ND		58	32	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200
Vinyl chloride	3.2		0.29	0.14	mg/Kg	✱	02/20/23 14:17	02/23/23 12:18	1
Xylenes, Total	ND		120	21	mg/Kg	✱	02/20/23 14:17	02/23/23 12:39	200

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 12:18	1
Toluene-d8 (Surr)	108		56 - 125	02/20/23 14:17	02/23/23 12:39	200
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 14:17	02/23/23 12:18	1
Dibromofluoromethane (Surr)	101		41 - 138	02/20/23 14:17	02/23/23 12:39	200
4-Bromofluorobenzene (Surr)	95		41 - 143	02/20/23 14:17	02/23/23 12:18	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 14:17	02/23/23 12:39	200
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	02/20/23 14:17	02/23/23 12:18	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 14:17	02/23/23 12:39	200

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4-Dimethylphenol	ND		3.5	0.93	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,4-Dinitrotoluene	ND		4.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Methylnaphthalene	2.6		0.35	0.046	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Methylphenol	ND		4.7	0.72	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Nitroaniline	ND		4.7	0.93	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
2-Nitrophenol	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
3-Nitroaniline	ND		4.7	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Chloro-3-methylphenol	ND		3.5	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
4-Nitrophenol	ND		7.7	2.2	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Acenaphthene	0.52		0.35	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Acenaphthylene	0.23	J	0.35	0.094	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Acetophenone	ND		2.3	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Anthracene	0.56		0.35	0.056	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Atrazine	ND	+	4.7	0.84	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzaldehyde	ND		2.3	0.54	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzo[a]anthracene	0.84		0.35	0.080	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzo[a]pyrene	0.57		0.35	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzo[b]fluoranthene	0.95		0.35	0.15	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzo[g,h,i]perylene	0.43		0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Benzo[k]fluoranthene	0.33	J	0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Butyl benzyl phthalate	ND		1.6	0.51	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.7	1.7	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Carbazole	ND		1.2	0.44	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Chrysene	1.1		0.35	0.035	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Dibenzofuran	0.88	J	1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Diethyl phthalate	ND		1.6	0.72	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Di-n-octyl phthalate	ND		1.6	0.65	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Fluoranthene	2.2		0.35	0.10	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Fluorene	0.50		0.35	0.064	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Hexachlorobenzene	ND		0.35	0.066	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Hexachlorocyclopentadiene	ND		7.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Indeno[1,2,3-cd]pyrene	0.37		0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Isophorone	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Naphthalene	1.8		0.35	0.056	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Phenanthrene	2.8		0.35	0.052	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Phenol	ND		1.2	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
Pyrene	1.7		0.35	0.050	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20
3 & 4 Methylphenol	ND		9.3	0.68	mg/Kg	☼	02/18/23 10:21	02/21/23 13:27	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	02/18/23 10:21	02/21/23 13:27	20
Phenol-d5 (Surr)	68		26 - 120	02/18/23 10:21	02/21/23 13:27	20
Nitrobenzene-d5 (Surr)	46		25 - 120	02/18/23 10:21	02/21/23 13:27	20
2-Fluorophenol (Surr)	57		20 - 120	02/18/23 10:21	02/21/23 13:27	20
2-Fluorobiphenyl (Surr)	62		34 - 120	02/18/23 10:21	02/21/23 13:27	20
2,4,6-Tribromophenol (Surr)	111		10 - 120	02/18/23 10:21	02/21/23 13:27	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 12:52	1
Barium	0.52	B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 12:52	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 12:52	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 12:52	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 12:52	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 12:52	1
Silver	0.00066	J	0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 12:52	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:39	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.5		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	15.5		0.1	0.1	%			02/18/23 10:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/19/23 14:31	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/19/23 14:31	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/19/23 14:31	1
Benzene	0.011	J	0.025	0.00042	mg/L			02/19/23 14:31	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/19/23 14:31	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/19/23 14:31	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/19/23 14:31	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/19/23 14:31	1
Vinyl chloride	0.28		0.025	0.00045	mg/L			02/19/23 14:31	1
Chloroform	ND		0.025	0.00047	mg/L			02/19/23 14:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		80 - 120					02/19/23 14:31	1
<i>Dibromofluoromethane (Surr)</i>	106		71 - 121					02/19/23 14:31	1
<i>4-Bromofluorobenzene (Surr)</i>	116		80 - 120					02/19/23 14:31	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		76 - 120					02/19/23 14:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND	F1	0.040	0.0033	mg/L		02/20/23 08:50	02/21/23 15:28	10
2,4,5-Trichlorophenol	ND	F1	0.040	0.020	mg/L		02/20/23 08:50	02/21/23 15:28	10
2,4,6-Trichlorophenol	ND	F1	0.040	0.018	mg/L		02/20/23 08:50	02/21/23 15:28	10
2,4-Dinitrotoluene	ND	F1	0.040	0.021	mg/L		02/20/23 08:50	02/21/23 15:28	10
Hexachlorobenzene	ND	F1	0.0080	0.0016	mg/L		02/20/23 08:50	02/21/23 15:28	10
Hexachlorobutadiene	ND	F1	0.040	0.0054	mg/L		02/20/23 08:50	02/21/23 15:28	10
Hexachloroethane	ND	F1	0.040	0.0040	mg/L		02/20/23 08:50	02/21/23 15:28	10
2-Methylphenol	ND	F1	0.040	0.0021	mg/L		02/20/23 08:50	02/21/23 15:28	10
3 & 4 Methylphenol	ND	F1	0.040	0.0019	mg/L		02/20/23 08:50	02/21/23 15:28	10
Nitrobenzene	ND	F1	0.040	0.0051	mg/L		02/20/23 08:50	02/21/23 15:28	10
Pentachlorophenol	ND		0.16	0.031	mg/L		02/20/23 08:50	02/21/23 15:28	10
Pyridine	ND		0.040	0.0036	mg/L		02/20/23 08:50	02/21/23 15:28	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	96		46 - 137				02/20/23 08:50	02/21/23 15:28	10
<i>Phenol-d5 (Surr)</i>	59		26 - 120				02/20/23 08:50	02/21/23 15:28	10
<i>Nitrobenzene-d5 (Surr)</i>	73		24 - 120				02/20/23 08:50	02/21/23 15:28	10
<i>2-Fluorophenol (Surr)</i>	65		19 - 120				02/20/23 08:50	02/21/23 15:28	10
<i>2-Fluorobiphenyl (Surr)</i>	80		33 - 120				02/20/23 08:50	02/21/23 15:28	10
<i>2,4,6-Tribromophenol (Surr)</i>	76		10 - 120				02/20/23 08:50	02/21/23 15:28	10

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/20/23 08:53	02/20/23 14:56	1
Endrin	ND		0.00050	0.0000065	mg/L		02/20/23 08:53	02/20/23 14:56	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/20/23 08:53	02/20/23 14:56	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/20/23 08:53	02/20/23 14:56	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/20/23 08:53	02/20/23 14:56	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/20/23 08:53	02/20/23 14:56	1
Toxaphene	ND		0.020	0.000058	mg/L		02/20/23 08:53	02/20/23 14:56	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	100		10 - 145	02/20/23 08:53	02/20/23 14:56	1
DCB Decachlorobiphenyl	97		10 - 145	02/20/23 08:53	02/20/23 14:56	1
Tetrachloro-m-xylene	77		10 - 123	02/20/23 08:53	02/20/23 14:56	1
Tetrachloro-m-xylene	78		10 - 123	02/20/23 08:53	02/20/23 14:56	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 07:45	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 07:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	62		26 - 136	02/21/23 20:16	02/22/23 07:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	13.2		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 86.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		60	30	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1221	ND		60	36	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1232	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1242	ND		60	23	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1248	ND		60	20	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1254	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1260	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1262	ND		60	26	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Aroclor-1268	ND		60	19	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Polychlorinated biphenyls, Total	ND		60	36	ug/Kg	✱	02/20/23 08:20	02/21/23 00:09	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	49		10 - 149				02/20/23 08:20	02/21/23 00:09	1
DCB Decachlorobiphenyl	43		10 - 174				02/20/23 08:20	02/21/23 00:09	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	0.36	J	0.68	0.23	ng/g	✱	02/21/23 12:53	02/21/23 17:11	1
Perfluorooctanesulfonic acid	0.44	J	0.68	0.23	ng/g	✱	02/21/23 12:53	02/21/23 17:11	1
Isotope Dilution									
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	80		26 - 159				02/21/23 12:53	02/21/23 17:11	1
13C8 PFOS	88		41 - 154				02/21/23 12:53	02/21/23 17:11	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 85.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		29	8.9	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,1,2,2-Tetrachloroethane	ND		29	17	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		29	7.7	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,1,2-Trichloroethane	ND		29	6.5	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,1-Dichloroethane	ND		29	5.5	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,1-Dichloroethene	ND		29	9.4	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,2,4-Trichlorobenzene	ND		29	15	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,2-Dibromo-3-Chloropropane	ND		57	25	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Ethylene Dibromide	ND		29	9.1	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,2-Dichlorobenzene	ND		29	14	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,2-Dichloroethane	ND		29	5.4	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,2-Dichloropropane	ND		29	4.2	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,3-Dichlorobenzene	ND		29	5.3	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
1,4-Dichlorobenzene	ND		29	6.3	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
2-Butanone (MEK)	ND		110	18	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
2-Hexanone	ND		110	30	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
4-Methyl-2-pentanone (MIBK)	ND		110	27	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Acetone	ND		110	28	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Benzene	ND		29	4.8	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Dichlorobromomethane	ND		29	7.0	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Bromoform	ND		29	26	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Bromomethane	ND		29	19	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Carbon disulfide	ND		29	12	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Carbon tetrachloride	ND		29	12	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Chlorobenzene	ND		29	4.0	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Chloroethane	ND		29	17	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Chloroform	ND		29	6.2	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Chloromethane	ND		29	7.6	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
cis-1,2-Dichloroethene	ND		29	4.6	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
cis-1,3-Dichloropropene	ND		29	14	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Cyclohexane	ND		57	19	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Chlorodibromomethane	ND		29	13	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Dichlorodifluoromethane	ND		29	6.1	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Ethylbenzene	ND		29	5.4	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Isopropylbenzene	ND		29	4.4	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Methyl acetate	ND		140	19	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Methyl tert-butyl ether	ND		29	4.2	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Methylcyclohexane	ND		57	7.6	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Methylene Chloride	ND		57	44	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Styrene	ND		29	6.0	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Tetrachloroethene	ND		29	11	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Toluene	ND		29	28	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
trans-1,2-Dichloroethene	ND		29	7.1	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
trans-1,3-Dichloropropene	ND		29	12	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Trichloroethene	ND		29	16	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Trichlorofluoromethane	ND		29	16	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11
Vinyl chloride	3.1		0.26	0.13	mg/Kg	✱	02/20/23 14:17	02/23/23 12:42	1
Xylenes, Total	ND		57	10	mg/Kg	✱	02/20/23 14:17	02/23/23 15:10	111.11

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 85.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/20/23 14:17	02/23/23 12:42	1
Toluene-d8 (Surr)	106		56 - 125	02/20/23 14:17	02/23/23 15:10	111.11
Dibromofluoromethane (Surr)	86		41 - 138	02/20/23 14:17	02/23/23 12:42	1
Dibromofluoromethane (Surr)	100		41 - 138	02/20/23 14:17	02/23/23 15:10	111.11
4-Bromofluorobenzene (Surr)	95		41 - 143	02/20/23 14:17	02/23/23 12:42	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 14:17	02/23/23 15:10	111.11
1,2-Dichloroethane-d4 (Surr)	91		58 - 125	02/20/23 14:17	02/23/23 12:42	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 14:17	02/23/23 15:10	111.11

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.39	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4-Dimethylphenol	ND		3.5	0.93	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,4-Dinitrotoluene	ND		4.6	1.4	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2,6-Dinitrotoluene	ND		4.6	1.3	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Chloronaphthalene	ND		1.2	0.32	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Methylnaphthalene	0.24		0.35	0.045	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Methylphenol	ND		4.6	0.72	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Nitroaniline	ND		4.6	0.93	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
2-Nitrophenol	ND		1.2	0.30	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
3-Nitroaniline	ND		4.6	1.1	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Bromophenyl phenyl ether	ND		1.2	0.32	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Chloro-3-methylphenol	ND		3.5	1.0	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Chlorophenyl phenyl ether	ND		1.2	0.32	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Nitroaniline	ND		4.6	1.4	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
4-Nitrophenol	ND		7.7	2.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Acenaphthene	0.36		0.35	0.066	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Acenaphthylene	0.21	J	0.35	0.093	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Acetophenone	ND		2.3	0.26	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Anthracene	0.48		0.35	0.056	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Atrazine	ND	+	4.6	0.84	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzaldehyde	ND		2.3	0.53	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzo[a]anthracene	0.83		0.35	0.079	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzo[a]pyrene	0.56		0.35	0.22	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzo[b]fluoranthene	1.0		0.35	0.15	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzo[g,h,i]perylene	0.42		0.35	0.16	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Benzo[k]fluoranthene	0.23	J	0.35	0.16	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20
Butyl benzyl phthalate	ND		1.6	0.51	mg/Kg	✱	02/18/23 10:21	02/21/23 13:51	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 85.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.7	1.7	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Carbazole	ND		1.2	0.44	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Chrysene	1.1		0.35	0.035	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Dibenzofuran	0.73	J	1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Diethyl phthalate	ND		1.6	0.72	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Dimethyl phthalate	ND		1.6	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Di-n-octyl phthalate	ND		1.6	0.65	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Fluoranthene	2.1		0.35	0.10	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Fluorene	0.37		0.35	0.064	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Hexachlorobenzene	ND		0.35	0.066	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Hexachlorocyclopentadiene	ND		7.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Indeno[1,2,3-cd]pyrene	0.33	J	0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Isophorone	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Naphthalene	1.7		0.35	0.056	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Pentachlorophenol	ND		3.5	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Phenanthrene	2.3		0.35	0.052	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Phenol	ND		1.2	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
Pyrene	1.6		0.35	0.050	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20
3 & 4 Methylphenol	ND		9.3	0.67	mg/Kg	☼	02/18/23 10:21	02/21/23 13:51	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	53		46 - 137	02/18/23 10:21	02/21/23 13:51	20
Phenol-d5 (Surr)	40		26 - 120	02/18/23 10:21	02/21/23 13:51	20
Nitrobenzene-d5 (Surr)	42		25 - 120	02/18/23 10:21	02/21/23 13:51	20
2-Fluorophenol (Surr)	59		20 - 120	02/18/23 10:21	02/21/23 13:51	20
2-Fluorobiphenyl (Surr)	54		34 - 120	02/18/23 10:21	02/21/23 13:51	20
2,4,6-Tribromophenol (Surr)	102		10 - 120	02/18/23 10:21	02/21/23 13:51	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 12:57	1
Barium	0.50	B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 12:57	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 12:57	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 12:57	1
Lead	0.014	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 12:57	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 12:57	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 12:57	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:46	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 85.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.1		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	14.9		0.1	0.1	%			02/18/23 10:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		86	27	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,1,2,2-Tetrachloroethane	ND		86	51	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		86	23	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,1,2-Trichloroethane	ND		86	20	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,1-Dichloroethane	ND		86	16	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,1-Dichloroethene	ND		86	28	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2,4-Trichlorobenzene	ND		86	46	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2-Dibromo-3-Chloropropane	ND		170	76	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Ethylene Dibromide	ND		86	27	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2-Dichlorobenzene	ND		86	41	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2-Dichloroethane	ND		86	16	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2-Dichloropropane	ND		86	13	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,3-Dichlorobenzene	ND		86	16	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
1,4-Dichlorobenzene	ND		86	19	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
2-Butanone (MEK)	ND		340	54	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
2-Hexanone	ND		340	90	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
4-Methyl-2-pentanone (MIBK)	ND		340	81	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Acetone	83	J B	340	83	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Benzene	ND		86	14	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Dichlorobromomethane	ND		86	21	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Bromoform	ND		86	78	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Bromomethane	ND		86	57	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Carbon disulfide	ND		86	37	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Carbon tetrachloride	ND		86	35	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Chlorobenzene	ND		86	12	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Chloroethane	ND		86	51	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Chloroform	ND		86	18	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3
Chloromethane	ND		86	23	mg/Kg	✱	02/20/23 14:17	02/23/23 14:19	333.333 3

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		86	14	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
cis-1,3-Dichloropropene	ND		86	42	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Cyclohexane	ND		170	56	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Chlorodibromomethane	ND		86	40	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Dichlorodifluoromethane	ND		86	18	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Ethylbenzene	ND		86	16	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Isopropylbenzene	ND		86	13	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Methyl acetate	ND		430	57	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Methyl tert-butyl ether	ND		86	13	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Methylcyclohexane	ND		170	23	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Methylene Chloride	ND		170	130	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Styrene	ND		86	18	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Tetrachloroethene	ND		86	33	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Toluene	ND		86	82	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
trans-1,2-Dichloroethene	ND		86	21	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
trans-1,3-Dichloropropene	ND		86	36	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Trichloroethene	ND		86	49	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Trichlorofluoromethane	ND		86	47	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3
Vinyl chloride	42		1.0	0.50	mg/Kg	☼	02/20/23 14:17	02/23/23 16:46	4
Xylenes, Total	ND		170	31	mg/Kg	☼	02/20/23 14:17	02/23/23 14:19	333.333 3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 14:19	333.333 3
Toluene-d8 (Surr)	105		56 - 125	02/20/23 14:17	02/23/23 16:46	4
Dibromofluoromethane (Surr)	103		41 - 138	02/20/23 14:17	02/23/23 14:19	333.333 3
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 14:17	02/23/23 16:46	4
4-Bromofluorobenzene (Surr)	107		41 - 143	02/20/23 14:17	02/23/23 14:19	333.333 3
4-Bromofluorobenzene (Surr)	100		41 - 143	02/20/23 14:17	02/23/23 16:46	4
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/20/23 14:17	02/23/23 14:19	333.333 3
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	02/20/23 14:17	02/23/23 16:46	4

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Methylnaphthalene	3.0		0.35	0.046	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Nitroaniline	ND		4.7	0.94	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
4-Nitrophenol	ND		7.7	2.2	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Acenaphthene	0.42		0.35	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Acenaphthylene	0.44		0.35	0.094	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Acetophenone	ND		2.3	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Anthracene	0.53		0.35	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Atrazine	ND	*+	4.7	0.85	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzaldehyde	ND		2.3	0.54	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzo[a]anthracene	0.83		0.35	0.080	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzo[a]pyrene	0.48		0.35	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzo[b]fluoranthene	0.97		0.35	0.15	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzo[g,h,i]perylene	0.39		0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Benzo[k]fluoranthene	0.22 J		0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Caprolactam	ND		7.7	1.8	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Carbazole	ND		1.2	0.45	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Chrysene	1.1		0.35	0.035	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Dibenzofuran	0.88 J		1.2	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Diethyl phthalate	ND		1.6	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Fluoranthene	2.2		0.35	0.10	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	0.44		0.35	0.064	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Hexachlorocyclopentadiene	ND		7.7	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Indeno[1,2,3-cd]pyrene	0.34	J	0.35	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Isophorone	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Naphthalene	2.5		0.35	0.057	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Nitrobenzene	ND		2.3	0.31	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Phenanthrene	2.6		0.35	0.052	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Phenol	ND		1.2	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Pyrene	1.7		0.35	0.050	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg	☼	02/18/23 10:21	02/21/23 14:15	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	60		46 - 137				02/18/23 10:21	02/21/23 14:15	20
<i>Phenol-d5 (Surr)</i>	53		26 - 120				02/18/23 10:21	02/21/23 14:15	20
<i>Nitrobenzene-d5 (Surr)</i>	45		25 - 120				02/18/23 10:21	02/21/23 14:15	20
<i>2-Fluorophenol (Surr)</i>	49		20 - 120				02/18/23 10:21	02/21/23 14:15	20
<i>2-Fluorobiphenyl (Surr)</i>	59		34 - 120				02/18/23 10:21	02/21/23 14:15	20
<i>2,4,6-Tribromophenol (Surr)</i>	111		10 - 120				02/18/23 10:21	02/21/23 14:15	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0062	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 13:01	1
Barium	0.40	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 13:01	1
Cadmium	0.0010	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 13:01	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 13:01	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 13:01	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 13:01	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 13:01	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.2		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	15.8		0.1	0.1	%			02/18/23 10:23	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		88	27	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,1,1,2-Tetrachloroethane	ND		88	53	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		88	23	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,1,2-Trichloroethane	ND		88	20	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,1-Dichloroethane	ND		88	17	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,1-Dichloroethene	ND		88	29	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2,4-Trichlorobenzene	ND		88	47	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2-Dibromo-3-Chloropropane	ND		180	77	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Ethylene Dibromide	ND		88	28	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2-Dichlorobenzene	ND		88	42	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2-Dichloroethane	ND		88	16	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2-Dichloropropane	ND		88	13	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,3-Dichlorobenzene	ND		88	16	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
1,4-Dichlorobenzene	ND		88	19	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
2-Butanone (MEK)	ND		350	55	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
2-Hexanone	ND		350	92	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
4-Methyl-2-pentanone (MIBK)	ND		350	83	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Acetone	96	J B	350	85	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Benzene	ND		88	15	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Dichlorobromomethane	ND		88	21	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Bromoform	ND		88	80	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Bromomethane	ND		88	58	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Carbon disulfide	ND		88	38	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Carbon tetrachloride	ND		88	36	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Chlorobenzene	ND		88	12	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Chloroethane	ND		88	53	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Chloroform	ND		88	19	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Chloromethane	ND		88	23	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		88	14	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
cis-1,3-Dichloropropene	ND		88	43	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Cyclohexane	ND		180	57	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Chlorodibromomethane	ND		88	41	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Dichlorodifluoromethane	ND		88	19	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Ethylbenzene	ND		88	16	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Isopropylbenzene	ND		88	13	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Methyl acetate	ND		440	59	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Methyl tert-butyl ether	ND		88	13	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Methylcyclohexane	ND		180	23	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Methylene Chloride	ND		180	130	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Styrene	ND		88	18	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Tetrachloroethene	ND		88	34	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Toluene	ND		88	84	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
trans-1,2-Dichloroethene	ND		88	22	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
trans-1,3-Dichloropropene	ND		88	37	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Trichloroethene	ND		88	50	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Trichlorofluoromethane	ND		88	48	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3
Vinyl chloride	20		0.26	0.13	mg/Kg	☼	02/20/23 14:17	02/23/23 13:31	1
Xylenes, Total	ND		180	32	mg/Kg	☼	02/20/23 14:17	02/23/23 14:45	333.333 3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/20/23 14:17	02/23/23 13:31	1
Toluene-d8 (Surr)	108		56 - 125	02/20/23 14:17	02/23/23 14:45	333.333 3
Dibromofluoromethane (Surr)	89		41 - 138	02/20/23 14:17	02/23/23 13:31	1
Dibromofluoromethane (Surr)	103		41 - 138	02/20/23 14:17	02/23/23 14:45	333.333 3
4-Bromofluorobenzene (Surr)	97		41 - 143	02/20/23 14:17	02/23/23 13:31	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/20/23 14:17	02/23/23 14:45	333.333 3
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/20/23 14:17	02/23/23 13:31	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 14:17	02/23/23 14:45	333.333 3

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4-Dimethylphenol	ND		3.7	0.99	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4-Dinitrophenol	ND		8.1	3.5	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,4-Dinitrotoluene	ND		4.9	1.5	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2,6-Dinitrotoluene	ND		4.9	1.4	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Methylnaphthalene	3.6		0.37	0.048	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Methylphenol	ND		4.9	0.77	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Nitroaniline	ND		4.9	0.99	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
3-Nitroaniline	ND		4.9	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4,6-Dinitro-2-methylphenol	ND		8.1	2.0	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Chloroaniline	ND		3.7	0.74	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Nitroaniline	ND		4.9	1.5	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
4-Nitrophenol	ND		8.1	2.3	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Acenaphthene	0.25	J	0.37	0.071	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Acenaphthylene	0.24	J	0.37	0.099	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Acetophenone	ND		2.5	0.27	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Anthracene	0.24	J	0.37	0.059	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Atrazine	ND	*+	4.9	0.89	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzo[a]anthracene	0.52		0.37	0.084	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzo[a]pyrene	0.34	J	0.37	0.23	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzo[b]fluoranthene	0.50		0.37	0.16	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzo[g,h,i]perylene	0.24	J	0.37	0.18	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Benzo[k]fluoranthene	0.20	J	0.37	0.17	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Butyl benzyl phthalate	ND		1.7	0.54	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Caprolactam	ND		8.1	1.9	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Carbazole	ND		1.2	0.47	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Chrysene	0.67		0.37	0.037	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Dibenzofuran	0.98	J	1.2	0.32	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Diethyl phthalate	ND		1.7	0.77	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Di-n-octyl phthalate	ND		1.7	0.69	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20
Fluoranthene	0.99		0.37	0.11	mg/Kg	✱	02/18/23 10:21	02/21/23 14:39	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	0.27	J	0.37	0.068	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Hexachlorobenzene	ND		0.37	0.070	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Hexachlorocyclopentadiene	ND		8.1	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Indeno[1,2,3-cd]pyrene	0.20	J	0.37	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Isophorone	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Naphthalene	2.7		0.37	0.059	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Phenanthrene	2.0		0.37	0.055	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Phenol	ND		1.2	0.20	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Pyrene	0.88		0.37	0.053	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
3 & 4 Methylphenol	ND		9.9	0.72	mg/Kg	☼	02/18/23 10:21	02/21/23 14:39	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	66		46 - 137				02/18/23 10:21	02/21/23 14:39	20
<i>Phenol-d5 (Surr)</i>	59		26 - 120				02/18/23 10:21	02/21/23 14:39	20
<i>Nitrobenzene-d5 (Surr)</i>	53		25 - 120				02/18/23 10:21	02/21/23 14:39	20
<i>2-Fluorophenol (Surr)</i>	56		20 - 120				02/18/23 10:21	02/21/23 14:39	20
<i>2-Fluorobiphenyl (Surr)</i>	68		34 - 120				02/18/23 10:21	02/21/23 14:39	20
<i>2,4,6-Tribromophenol (Surr)</i>	111		10 - 120				02/18/23 10:21	02/21/23 14:39	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0057	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 13:06	1
Barium	0.36	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 13:06	1
Cadmium	0.00087	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 13:06	1
Chromium	0.013	J	0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 13:06	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 13:06	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 13:06	1
Silver	0.00063	J	0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 13:06	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.5		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	18.5		0.1	0.1	%			02/18/23 10:23	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		17	5.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,1,2,2-Tetrachloroethane	ND		17	10	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		17	4.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,1,2-Trichloroethane	ND		17	3.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,1-Dichloroethane	ND		17	3.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,1-Dichloroethene	ND		17	5.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,2,4-Trichlorobenzene	ND		17	9.1	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,2-Dibromo-3-Chloropropane	ND		34	15	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Ethylene Dibromide	ND		17	5.4	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,2-Dichlorobenzene	ND		17	8.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,2-Dichloroethane	ND		17	3.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,2-Dichloropropane	ND		17	2.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,3-Dichlorobenzene	ND		17	3.1	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
1,4-Dichlorobenzene	ND		17	3.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
2-Butanone (MEK)	ND		68	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
2-Hexanone	ND		68	18	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
4-Methyl-2-pentanone (MIBK)	ND		68	16	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Acetone	17	J B	68	17	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Benzene	ND		17	2.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Dichlorobromomethane	ND		17	4.1	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Bromoform	ND		17	16	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Bromomethane	ND		17	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Carbon disulfide	ND		17	7.4	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Carbon tetrachloride	ND		17	6.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Chlorobenzene	ND		17	2.4	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Chloroethane	ND		17	10	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Chloroform	ND		17	3.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Chloromethane	ND		17	4.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
cis-1,2-Dichloroethene	ND		17	2.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
cis-1,3-Dichloropropene	ND		17	8.4	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Cyclohexane	ND		34	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Chlorodibromomethane	ND		17	8.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Dichlorodifluoromethane	ND		17	3.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Ethylbenzene	ND		17	3.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Isopropylbenzene	ND		17	2.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Methyl acetate	ND		85	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Methyl tert-butyl ether	ND		17	2.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Methylcyclohexane	ND		34	4.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Methylene Chloride	ND		34	26	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Styrene	ND		17	3.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Tetrachloroethene	ND		17	6.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Toluene	ND		17	16	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
trans-1,2-Dichloroethene	ND		17	4.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
trans-1,3-Dichloropropene	ND		17	7.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Trichloroethene	ND		17	9.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Trichlorofluoromethane	ND		17	9.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666
Vinyl chloride	19		0.26	0.13	mg/Kg	✱	02/20/23 14:17	02/23/23 13:56	1
Xylenes, Total	ND		34	6.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:04	66.6666

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 80.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/20/23 14:17	02/23/23 13:04	66.6666
Toluene-d8 (Surr)	106		56 - 125	02/20/23 14:17	02/23/23 13:56	1
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/23/23 15:35	125
Dibromofluoromethane (Surr)	100		41 - 138	02/20/23 14:17	02/23/23 13:04	66.6666
Dibromofluoromethane (Surr)	89		41 - 138	02/20/23 14:17	02/23/23 13:56	1
Dibromofluoromethane (Surr)	103		41 - 138	02/20/23 14:17	02/23/23 15:35	125
4-Bromofluorobenzene (Surr)	104		41 - 143	02/20/23 14:17	02/23/23 13:04	66.6666
4-Bromofluorobenzene (Surr)	98		41 - 143	02/20/23 14:17	02/23/23 13:56	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 14:17	02/23/23 15:35	125
1,2-Dichloroethane-d4 (Surr)	105		58 - 125	02/20/23 14:17	02/23/23 13:04	66.6666
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	02/20/23 14:17	02/23/23 13:56	1
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/20/23 14:17	02/23/23 15:35	125

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4-Dimethylphenol	ND		3.7	0.99	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4-Dinitrophenol	ND		8.1	3.5	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,4-Dinitrotoluene	ND		4.9	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2,6-Dinitrotoluene	ND		4.9	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Methylnaphthalene	3.4		0.37	0.048	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Methylphenol	ND		4.9	0.77	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Nitroaniline	ND		4.9	0.99	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
3-Nitroaniline	ND		4.9	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4,6-Dinitro-2-methylphenol	ND		8.1	2.0	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Chloroaniline	ND		3.7	0.74	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Nitroaniline	ND		4.9	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
4-Nitrophenol	ND		8.1	2.3	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Acenaphthene	0.45		0.37	0.071	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Acenaphthylene	0.44		0.37	0.099	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Acetophenone	ND		2.5	0.27	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Anthracene	0.55		0.37	0.059	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Atrazine	ND	+	4.9	0.89	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzo[a]anthracene	0.99		0.37	0.084	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzo[a]pyrene	0.63		0.37	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzo[g,h,i]perylene	0.48		0.37	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Benzo[k]fluoranthene	0.41		0.37	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 80.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Butyl benzyl phthalate	ND		1.7	0.54	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Caprolactam	ND		8.1	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Carbazole	ND		1.2	0.47	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Chrysene	1.3		0.37	0.037	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Dibenzofuran	1.1 J		1.2	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Diethyl phthalate	ND		1.7	0.77	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Di-n-octyl phthalate	ND		1.7	0.69	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Fluoranthene	2.4		0.37	0.11	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Fluorene	0.51		0.37	0.068	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Hexachlorobenzene	ND		0.37	0.070	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Hexachlorocyclopentadiene	ND		8.1	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Indeno[1,2,3-cd]pyrene	0.42		0.37	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Isophorone	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Naphthalene	2.8		0.37	0.059	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Phenanthrene	3.1		0.37	0.055	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Phenol	ND		1.2	0.20	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
Pyrene	1.8		0.37	0.053	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20
3 & 4 Methylphenol	ND		9.9	0.72	mg/Kg	☼	02/18/23 10:21	02/21/23 16:16	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	61		46 - 137	02/18/23 10:21	02/21/23 16:16	20
Phenol-d5 (Surr)	54		26 - 120	02/18/23 10:21	02/21/23 16:16	20
Nitrobenzene-d5 (Surr)	44		25 - 120	02/18/23 10:21	02/21/23 16:16	20
2-Fluorophenol (Surr)	52		20 - 120	02/18/23 10:21	02/21/23 16:16	20
2-Fluorobiphenyl (Surr)	64		34 - 120	02/18/23 10:21	02/21/23 16:16	20
2,4,6-Tribromophenol (Surr)	118		10 - 120	02/18/23 10:21	02/21/23 16:16	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0047	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 13:10	1
Barium	0.63	B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 13:10	1
Cadmium	0.00093	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 13:10	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 13:10	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 13:10	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 13:10	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 13:10	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 80.9

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.9		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	19.1		0.1	0.1	%			02/18/23 10:23	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		12	3.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,1,2,2-Tetrachloroethane	ND		12	7.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		12	3.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,1,2-Trichloroethane	ND		12	2.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,1-Dichloroethane	ND		12	2.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,1-Dichloroethene	ND		12	4.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,2,4-Trichlorobenzene	ND		12	6.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,2-Dibromo-3-Chloropropane	ND		24	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Ethylene Dibromide	ND		12	3.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,2-Dichlorobenzene	ND		12	5.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,2-Dichloroethane	ND		12	2.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,2-Dichloropropane	ND		12	1.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,3-Dichlorobenzene	ND		12	2.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
1,4-Dichlorobenzene	ND		12	2.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
2-Butanone (MEK)	ND		49	7.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
2-Hexanone	ND		49	13	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
4-Methyl-2-pentanone (MIBK)	ND		49	12	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Acetone	17	J B	49	12	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Benzene	ND		12	2.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Dichlorobromomethane	ND		12	3.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Bromoform	ND		12	11	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Bromomethane	ND		12	8.1	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Carbon disulfide	ND		12	5.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Carbon tetrachloride	ND		12	5.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Chlorobenzene	ND		12	1.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Chloroethane	ND		12	7.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Chloroform	ND		12	2.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Chloromethane	ND		12	3.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
cis-1,2-Dichloroethene	ND		12	1.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
cis-1,3-Dichloropropene	ND		12	6.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Cyclohexane	ND		24	7.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Chlorodibromomethane	ND		12	5.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Dichlorodifluoromethane	ND		12	2.6	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Ethylbenzene	ND		12	2.3	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Isopropylbenzene	ND		12	1.9	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Methyl acetate	ND		61	8.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Methyl tert-butyl ether	ND		12	1.8	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Methylcyclohexane	ND		24	3.2	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Methylene Chloride	ND		24	19	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Styrene	ND		12	2.5	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Tetrachloroethene	ND		12	4.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Toluene	ND		12	12	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
trans-1,2-Dichloroethene	ND		12	3.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
trans-1,3-Dichloropropene	ND		12	5.1	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Trichloroethene	ND		12	7.0	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Trichlorofluoromethane	ND		12	6.7	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40
Vinyl chloride	1.3	F1	0.30	0.15	mg/Kg	✱	02/20/23 14:17	02/23/23 14:20	1
Xylenes, Total	ND		24	4.4	mg/Kg	✱	02/20/23 14:17	02/23/23 13:29	40

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		56 - 125	02/20/23 14:17	02/23/23 13:29	40
Toluene-d8 (Surr)	103		56 - 125	02/20/23 14:17	02/23/23 14:20	1
Dibromofluoromethane (Surr)	99		41 - 138	02/20/23 14:17	02/23/23 13:29	40
Dibromofluoromethane (Surr)	89		41 - 138	02/20/23 14:17	02/23/23 14:20	1
4-Bromofluorobenzene (Surr)	104		41 - 143	02/20/23 14:17	02/23/23 13:29	40
4-Bromofluorobenzene (Surr)	98		41 - 143	02/20/23 14:17	02/23/23 14:20	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 14:17	02/23/23 13:29	40
1,2-Dichloroethane-d4 (Surr)	91		58 - 125	02/20/23 14:17	02/23/23 14:20	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND	F1	1.3	0.43	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
bis (2-chloroisopropyl) ether	ND	F1	2.5	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4,5-Trichlorophenol	ND		3.8	1.7	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4,6-Trichlorophenol	ND		3.8	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4-Dichlorophenol	ND		3.8	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4-Dimethylphenol	ND		3.8	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4-Dinitrophenol	ND		8.3	3.6	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,4-Dinitrotoluene	ND		5.0	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Chloronaphthalene	ND		1.3	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Chlorophenol	ND		1.3	0.25	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Methylnaphthalene	5.0		0.38	0.049	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Methylphenol	ND	F1	5.0	0.78	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Nitroaniline	ND		5.0	1.0	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
2-Nitrophenol	ND		1.3	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
3,3'-Dichlorobenzidine	ND	F1	2.5	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4,6-Dinitro-2-methylphenol	ND		8.3	2.0	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Bromophenyl phenyl ether	ND		1.3	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Chloro-3-methylphenol	ND		3.8	1.1	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Chloroaniline	ND	F1	3.8	0.76	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Chlorophenyl phenyl ether	ND		1.3	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
4-Nitrophenol	ND		8.3	2.4	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Acenaphthene	0.15	J	0.38	0.072	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Acenaphthylene	0.22	J	0.38	0.10	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Acetophenone	ND		2.5	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Anthracene	0.22	J	0.38	0.061	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Atrazine	ND	*+	5.0	0.91	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzaldehyde	ND	F1	2.5	0.58	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzo[a]anthracene	0.60		0.38	0.086	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzo[a]pyrene	0.49		0.38	0.24	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzo[b]fluoranthene	0.77		0.38	0.16	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzo[g,h,i]perylene	0.44		0.38	0.18	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Benzo[k]fluoranthene	0.28	J	0.38	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Bis(2-chloroethyl)ether	ND	F1	2.5	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Bis(2-ethylhexyl) phthalate	1.9	F1	1.8	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Butyl benzyl phthalate	ND	F1	1.8	0.55	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.3	1.9	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Carbazole	ND		1.3	0.48	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Chrysene	0.95		0.38	0.038	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Dibenz(a,h)anthracene	ND		0.38	0.17	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Dibenzofuran	1.3		1.3	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Diethyl phthalate	ND	F1	1.8	0.78	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Dimethyl phthalate	ND		1.8	0.35	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Di-n-octyl phthalate	ND	F1	1.8	0.70	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Fluoranthene	0.86		0.38	0.11	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Fluorene	0.16	J	0.38	0.069	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Hexachlorobenzene	ND		0.38	0.072	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Hexachlorobutadiene	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Hexachlorocyclopentadiene	ND		8.3	1.6	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Indeno[1,2,3-cd]pyrene	0.34	J	0.38	0.19	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Isophorone	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
N-Nitrosodiphenylamine	ND		1.3	0.30	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Naphthalene	3.1	F1	0.38	0.061	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Nitrobenzene	ND		2.5	0.33	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Pentachlorophenol	ND	F1	3.8	1.5	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Phenanthrene	2.4	F1	0.38	0.056	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Phenol	ND		1.3	0.20	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
Pyrene	0.84		0.38	0.054	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20
3 & 4 Methylphenol	ND	F1	10	0.73	mg/Kg	☼	02/18/23 10:21	02/21/23 15:04	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	02/18/23 10:21	02/21/23 15:04	20
Phenol-d5 (Surr)	76		26 - 120	02/18/23 10:21	02/21/23 15:04	20
Nitrobenzene-d5 (Surr)	69		25 - 120	02/18/23 10:21	02/21/23 15:04	20
2-Fluorophenol (Surr)	69		20 - 120	02/18/23 10:21	02/21/23 15:04	20
2-Fluorobiphenyl (Surr)	86		34 - 120	02/18/23 10:21	02/21/23 15:04	20
2,4,6-Tribromophenol (Surr)	135	S1+	10 - 120	02/18/23 10:21	02/21/23 15:04	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0055	J	0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 13:15	1
Barium	0.40	J B	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 13:15	1
Cadmium	0.00077	J	0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 13:15	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 13:15	1
Lead	0.011	J B	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 13:15	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 13:15	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 13:15	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:54	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.5		0.1	0.1	%			02/18/23 10:23	1
Percent Moisture (EPA Moisture)	21.5		0.1	0.1	%			02/18/23 10:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/19/23 14:54	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/19/23 14:54	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/19/23 14:54	1
Benzene	0.017	J	0.025	0.00042	mg/L			02/19/23 14:54	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/19/23 14:54	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/19/23 14:54	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/19/23 14:54	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/19/23 14:54	1
Vinyl chloride	0.83		0.025	0.00045	mg/L			02/19/23 14:54	1
Chloroform	ND		0.025	0.00047	mg/L			02/19/23 14:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	93		80 - 120					02/19/23 14:54	1
<i>Dibromofluoromethane (Surr)</i>	107		71 - 121					02/19/23 14:54	1
<i>4-Bromofluorobenzene (Surr)</i>	113		80 - 120					02/19/23 14:54	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		76 - 120					02/19/23 14:54	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.040	0.0033	mg/L		02/20/23 08:50	02/21/23 16:16	10
2,4,5-Trichlorophenol	ND		0.040	0.020	mg/L		02/20/23 08:50	02/21/23 16:16	10
2,4,6-Trichlorophenol	ND		0.040	0.018	mg/L		02/20/23 08:50	02/21/23 16:16	10
2,4-Dinitrotoluene	ND		0.040	0.021	mg/L		02/20/23 08:50	02/21/23 16:16	10
Hexachlorobenzene	ND		0.0080	0.0016	mg/L		02/20/23 08:50	02/21/23 16:16	10
Hexachlorobutadiene	ND		0.040	0.0054	mg/L		02/20/23 08:50	02/21/23 16:16	10
Hexachloroethane	ND		0.040	0.0040	mg/L		02/20/23 08:50	02/21/23 16:16	10
2-Methylphenol	ND		0.040	0.0021	mg/L		02/20/23 08:50	02/21/23 16:16	10
3 & 4 Methylphenol	ND		0.040	0.0019	mg/L		02/20/23 08:50	02/21/23 16:16	10
Nitrobenzene	ND		0.040	0.0051	mg/L		02/20/23 08:50	02/21/23 16:16	10
Pentachlorophenol	ND		0.16	0.031	mg/L		02/20/23 08:50	02/21/23 16:16	10
Pyridine	ND		0.040	0.0036	mg/L		02/20/23 08:50	02/21/23 16:16	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	106		46 - 137				02/20/23 08:50	02/21/23 16:16	10
<i>Phenol-d5 (Surr)</i>	69		26 - 120				02/20/23 08:50	02/21/23 16:16	10
<i>Nitrobenzene-d5 (Surr)</i>	82		24 - 120				02/20/23 08:50	02/21/23 16:16	10
<i>2-Fluorophenol (Surr)</i>	67		19 - 120				02/20/23 08:50	02/21/23 16:16	10
<i>2-Fluorobiphenyl (Surr)</i>	90		33 - 120				02/20/23 08:50	02/21/23 16:16	10
<i>2,4,6-Tribromophenol (Surr)</i>	66		10 - 120				02/20/23 08:50	02/21/23 16:16	10

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/20/23 08:53	02/20/23 15:12	1
Endrin	ND		0.00050	0.0000065	mg/L		02/20/23 08:53	02/20/23 15:12	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/20/23 08:53	02/20/23 15:12	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/20/23 08:53	02/20/23 15:12	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/20/23 08:53	02/20/23 15:12	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/20/23 08:53	02/20/23 15:12	1
Toxaphene	ND		0.020	0.000058	mg/L		02/20/23 08:53	02/20/23 15:12	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	90		10 - 145	02/20/23 08:53	02/20/23 15:12	1
DCB Decachlorobiphenyl	90		10 - 145	02/20/23 08:53	02/20/23 15:12	1
Tetrachloro-m-xylene	72		10 - 123	02/20/23 08:53	02/20/23 15:12	1
Tetrachloro-m-xylene	72		10 - 123	02/20/23 08:53	02/20/23 15:12	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 08:13	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 08:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	02/21/23 20:16	02/22/23 08:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.9		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	16.1		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 83.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		60	30	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1221	ND		60	36	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1232	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1242	ND		60	23	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1248	ND		60	20	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1254	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1260	ND		60	25	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1262	ND		60	26	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Aroclor-1268	ND		60	19	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1
Polychlorinated biphenyls, Total	ND		60	36	ug/Kg	✱	02/20/23 08:20	02/21/23 00:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		10 - 149	02/20/23 08:20	02/21/23 00:25	1
DCB Decachlorobiphenyl	91		10 - 174	02/20/23 08:20	02/21/23 00:25	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	0.32	J	0.69	0.23	ng/g	✱	02/21/23 12:53	02/21/23 17:22	1
Perfluorooctanesulfonic acid	0.36	J	0.69	0.23	ng/g	✱	02/21/23 12:53	02/21/23 17:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	77		26 - 159	02/21/23 12:53	02/21/23 17:22	1
13C8 PFOS	87		41 - 154	02/21/23 12:53	02/21/23 17:22	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180588-1	WC-WS1-A1 (2-3)	108	100	108	108
240-180588-1	WC-WS1-A1 (2-3)	106	85	95	96
240-180588-2	WC-WS1-A2 (2.5-3.5)	105	101	104	104
240-180588-2	WC-WS1-A2 (2.5-3.5)	107	101	108	111
240-180588-2	WC-WS1-A2 (2.5-3.5)	107	88	95	95
240-180588-3	WC-WS1-A3 (3-4)	107	101	108	112
240-180588-3	WC-WS1-A3 (3-4)	103	88	101	92
240-180588-4	WC-WS1-A4 (5-6)	106	102	107	108
240-180588-4	WC-WS1-A4 (5-6)	105	90	96	97
240-180588-5	WC-WS1-A5 (1-2)	108	101	106	109
240-180588-5	WC-WS1-A5 (1-2)	107	88	95	94
240-180588-7	WC-WS1-A6 (3-4)	106	100	106	109
240-180588-7	WC-WS1-A6 (3-4)	105	86	95	91
240-180588-8	WC-WS1-A7 (2-3)	107	103	107	111
240-180588-8	WC-WS1-A7 (2-3)	105	88	100	93
240-180588-9	WC-WS1-A8 (4-5)	108	103	105	109
240-180588-9	WC-WS1-A8 (4-5)	106	89	97	92
240-180588-10	WC-WS1-A9 (3-4)	105	100	104	105
240-180588-10	WC-WS1-A9 (3-4)	107	103	106	110
240-180588-10	WC-WS1-A9 (3-4)	106	89	98	93
240-180588-11	WC-WS1-A10 (2-3)	104	99	104	109
240-180588-11	WC-WS1-A10 (2-3)	103	89	98	91
240-180588-11 MS	WC-WS1-A10 (2-3)	106	89	96	92
240-180588-11 MSD	WC-WS1-A10 (2-3)	105	88	97	94
LCS 240-562767/2-A	Lab Control Sample	109	106	108	106
LCS 240-562767/2-A	Lab Control Sample	100	91	97	100
MB 240-562767/1-A	Method Blank	107	96	106	106
MB 240-562767/1-A	Method Blank	99	88	97	98

Surrogate Legend

- TOL = Toluene-d8 (Surr)
- DBFM = Dibromofluoromethane (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-562573/10	Lab Control Sample	94	109	111	100

Surrogate Legend

- TOL = Toluene-d8 (Surr)
- DBFM = Dibromofluoromethane (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180588-6	WC-WS1-COMP (A1-A5)	96	106	116	101
240-180588-12	WC-WS1-COMP (A6-A10)	93	107	113	101
240-180588-12 MS	WC-WS1-COMP (A6-A10)	95	109	113	102
240-180588-12 MSD	WC-WS1-COMP (A6-A10)	97	106	114	93
LB 240-562552/1-A MB	Method Blank	94	104	110	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180588-1	WC-WS1-A1 (2-3)	79	66	53	64	77	125 S1+
240-180588-2	WC-WS1-A2 (2.5-3.5)	84	68	54	57	76	126 S1+
240-180588-3	WC-WS1-A3 (3-4)	57	53	42	48	57	89
240-180588-4	WC-WS1-A4 (5-6)	67	60	49	56	67	106
240-180588-5	WC-WS1-A5 (1-2)	66	68	46	57	62	111
240-180588-7	WC-WS1-A6 (3-4)	53	40	42	59	54	102
240-180588-8	WC-WS1-A7 (2-3)	60	53	45	49	59	111
240-180588-9	WC-WS1-A8 (4-5)	66	59	53	56	68	111
240-180588-10	WC-WS1-A9 (3-4)	61	54	44	52	64	118
240-180588-11	WC-WS1-A10 (2-3)	94	76	69	69	86	135 S1+
240-180588-11 MS	WC-WS1-A10 (2-3)	91	73	52	65	84	128 S1+
240-180588-11 MSD	WC-WS1-A10 (2-3)	85	68	64	72	81	133 S1+
LCS 240-562526/23-A	Lab Control Sample	127	71	65	69	90	104
LCS 240-562526/24-A	Lab Control Sample	111	33	32	26	44	12
MB 240-562526/22-A	Method Blank	107	58	55	52	74	26

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-562656/5-A	Lab Control Sample	113	74	99	77	96	84
MB 240-562656/4-A	Method Blank	119	83	103	89	106	91

Surrogate Legend

Surrogate Summary

Client: Norfolk Southern Corporation

Job ID: 240-180588-1

Project/Site: NS East Palestine

- TPHL = Terphenyl-d14 (Surr)
- PHL = Phenol-d5 (Surr)
- NBZ = Nitrobenzene-d5 (Surr)
- 2FP = 2-Fluorophenol (Surr)
- FBP = 2-Fluorobiphenyl (Surr)
- TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180588-6	WC-WS1-COMP (A1-A5)	96	59	73	65	80	76
240-180588-6 MS	WC-WS1-COMP (A1-A5)	216 S1+	161 S1+	182 S1+	164 S1+	177 S1+	164 S1+
240-180588-12	WC-WS1-COMP (A6-A10)	106	69	82	67	90	66

Surrogate Legend

- TPHL = Terphenyl-d14 (Surr)
- PHL = Phenol-d5 (Surr)
- NBZ = Nitrobenzene-d5 (Surr)
- 2FP = 2-Fluorophenol (Surr)
- FBP = 2-Fluorobiphenyl (Surr)
- TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-562657/5-A	Lab Control Sample	84	87	65	74
MB 240-562657/4-A	Method Blank	81	85	68	78

Surrogate Legend

- DCBP = DCB Decachlorobiphenyl
- TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180588-6	WC-WS1-COMP (A1-A5)	100	97	77	78
240-180588-12	WC-WS1-COMP (A6-A10)	90	90	72	72
240-180588-12 MS	WC-WS1-COMP (A6-A10)	86	89	71	71

Surrogate Legend

- DCBP = DCB Decachlorobiphenyl
- TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-180588-6	WC-WS1-COMP (A1-A5)	49	43

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (10-149)	DCBP2 (10-174)
240-180588-12	WC-WS1-COMP (A6-A10)	75	91
LCS 240-562650/2-A	Lab Control Sample	94	123
MB 240-562650/1-A	Method Blank	53	93

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
LCS 410-346721/6-A	Lab Control Sample	68
MB 410-346721/1-A	Method Blank	60
MB 410-346721/2-A	Method Blank	55
MB 410-346721/4-A	Method Blank	57
MB 410-346721/5-A	Method Blank	58

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
MB 410-346721/3-A	Method Blank	57

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
240-180588-6	WC-WS1-COMP (A1-A5)	62

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
240-180588-12	WC-WS1-COMP (A6-A10)	61

Surrogate Legend

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation

Project/Site: NS East Palestine

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Job ID: 240-180588-1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 240-562573/10

Matrix: Solid

Analysis Batch: 562573

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	0.963		mg/L		96	74 - 127
1,2-Dichloroethane	1.00	0.890		mg/L		89	72 - 120
2-Butanone (MEK)	2.00	1.66		mg/L		83	68 - 130
Benzene	1.00	0.948		mg/L		95	80 - 121
Carbon tetrachloride	1.00	0.918		mg/L		92	69 - 120
Chlorobenzene	1.00	0.897		mg/L		90	80 - 120
Chloroform	1.00	0.992		mg/L		99	75 - 120
Tetrachloroethene	1.00	0.907		mg/L		91	74 - 120
Trichloroethene	1.00	0.906		mg/L		91	75 - 120
Vinyl chloride	1.00	0.958		mg/L		96	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Toluene-d8 (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	109		71 - 121
4-Bromofluorobenzene (Surr)	111		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		76 - 120

Lab Sample ID: MB 240-562767/1-A

Matrix: Solid

Analysis Batch: 563073

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562767

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Acetone	1.05		1.0	0.24	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Benzene	ND		0.25	0.042	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Bromoform	ND		0.25	0.23	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/20/23 14:17	02/22/23 22:45	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562767/1-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562767

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloroform	ND		0.25	0.054	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Styrene	ND		0.25	0.052	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Toluene	ND		0.25	0.24	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/20/23 14:17	02/22/23 22:45	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/20/23 14:17	02/22/23 22:45	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	107		56 - 125	02/20/23 14:17	02/22/23 22:45	1
Dibromofluoromethane (Surr)	96		41 - 138	02/20/23 14:17	02/22/23 22:45	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 14:17	02/22/23 22:45	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125	02/20/23 14:17	02/22/23 22:45	1

Lab Sample ID: MB 240-562767/1-A
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562767

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/20/23 14:17	02/23/23 10:11	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		56 - 125	02/20/23 14:17	02/23/23 10:11	1
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 14:17	02/23/23 10:11	1
4-Bromofluorobenzene (Surr)	97		41 - 143	02/20/23 14:17	02/23/23 10:11	1
1,2-Dichloroethane-d4 (Surr)	98		58 - 125	02/20/23 14:17	02/23/23 10:11	1

Lab Sample ID: LCS 240-562767/2-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562767/2-A

Matrix: Solid

Analysis Batch: 563073

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,1,2,2-Tetrachloroethane	1.25	1.17		mg/Kg		94	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.22		mg/Kg		97	64 - 148
1,1,2-Trichloroethane	1.25	1.28		mg/Kg		102	79 - 120
1,1-Dichloroethane	1.25	1.20		mg/Kg		96	74 - 121
1,1-Dichloroethene	1.25	1.15		mg/Kg		92	68 - 141
1,2,4-Trichlorobenzene	1.25	1.19		mg/Kg		95	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.871		mg/Kg		70	52 - 133
Ethylene Dibromide	1.25	1.23		mg/Kg		98	80 - 121
1,2-Dichlorobenzene	1.25	1.30		mg/Kg		104	73 - 120
1,2-Dichloroethane	1.25	1.23		mg/Kg		98	71 - 123
1,2-Dichloropropane	1.25	1.21		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	1.25	1.27		mg/Kg		101	73 - 120
1,4-Dichlorobenzene	1.25	1.27		mg/Kg		102	74 - 120
2-Butanone (MEK)	2.50	2.36		mg/Kg		95	63 - 142
2-Hexanone	2.50	2.38		mg/Kg		95	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.37		mg/Kg		95	62 - 142
Acetone	2.50	2.66		mg/Kg		106	58 - 160
Benzene	1.25	1.25		mg/Kg		100	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		85	71 - 138
Bromoform	1.25	0.874		mg/Kg		70	57 - 140
Bromomethane	1.25	0.653		mg/Kg		52	10 - 171
Carbon disulfide	1.25	0.844		mg/Kg		68	43 - 152
Carbon tetrachloride	1.25	0.980		mg/Kg		78	64 - 144
Chlorobenzene	1.25	1.27		mg/Kg		102	80 - 120
Chloroethane	1.25	0.595		mg/Kg		48	11 - 164
Chloroform	1.25	1.22		mg/Kg		97	78 - 120
Chloromethane	1.25	1.41		mg/Kg		113	41 - 142
cis-1,2-Dichloroethene	1.25	1.26		mg/Kg		101	78 - 124
cis-1,3-Dichloropropene	1.25	1.13		mg/Kg		90	70 - 133
Cyclohexane	1.25	1.24		mg/Kg		99	65 - 137
Chlorodibromomethane	1.25	0.985		mg/Kg		79	68 - 131
Dichlorodifluoromethane	1.25	1.56		mg/Kg		125	21 - 150
Ethylbenzene	1.25	1.30		mg/Kg		104	80 - 120
Isopropylbenzene	1.25	1.32		mg/Kg		106	80 - 130
Methyl acetate	2.50	2.34		mg/Kg		93	60 - 133
Methyl tert-butyl ether	1.25	1.21		mg/Kg		96	70 - 130
Methylcyclohexane	1.25	1.24		mg/Kg		99	70 - 138
Methylene Chloride	1.25	1.35		mg/Kg		108	71 - 124
Styrene	1.25	1.31		mg/Kg		105	75 - 140
Tetrachloroethene	1.25	1.34		mg/Kg		107	76 - 127
Toluene	1.25	1.26		mg/Kg		101	80 - 120
trans-1,2-Dichloroethene	1.25	1.18		mg/Kg		94	76 - 130
trans-1,3-Dichloropropene	1.25	1.14		mg/Kg		92	61 - 121
Trichloroethene	1.25	1.27		mg/Kg		102	74 - 130
Trichlorofluoromethane	1.25	1.03		mg/Kg		82	50 - 154
Vinyl chloride	1.25	1.42		mg/Kg		113	49 - 146
Xylenes, Total	2.50	2.57		mg/Kg		103	80 - 122
m-Xylene & p-Xylene	1.25	1.29		mg/Kg		103	80 - 122

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562767/2-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	1.25	1.28		mg/Kg		103	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	109		56 - 125
Dibromofluoromethane (Surr)	106		41 - 138
4-Bromofluorobenzene (Surr)	108		41 - 143
1,2-Dichloroethane-d4 (Surr)	106		58 - 125

Lab Sample ID: LCS 240-562767/2-A
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.27		mg/Kg		127	49 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		56 - 125
Dibromofluoromethane (Surr)	91		41 - 138
4-Bromofluorobenzene (Surr)	97		41 - 143
1,2-Dichloroethane-d4 (Surr)	100		58 - 125

Lab Sample ID: 240-180588-11 MS
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: WC-WS1-A10 (2-3)
Prep Type: Total/NA
Prep Batch: 562767

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.3	F1	1.22	4.49	F1	mg/Kg	⊛	261	32 - 163

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	106		56 - 125
Dibromofluoromethane (Surr)	89		41 - 138
4-Bromofluorobenzene (Surr)	96		41 - 143
1,2-Dichloroethane-d4 (Surr)	92		58 - 125

Lab Sample ID: 240-180588-11 MSD
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: WC-WS1-A10 (2-3)
Prep Type: Total/NA
Prep Batch: 562767

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Vinyl chloride	1.3	F1	1.22	4.70	F1	mg/Kg	⊛	279	32 - 163	5	38

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	105		56 - 125
Dibromofluoromethane (Surr)	88		41 - 138
4-Bromofluorobenzene (Surr)	97		41 - 143
1,2-Dichloroethane-d4 (Surr)	94		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-562552/1-A MB
Matrix: Solid
Analysis Batch: 562573

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/19/23 13:44	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/19/23 13:44	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/19/23 13:44	1
Benzene	ND		0.025	0.00042	mg/L			02/19/23 13:44	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/19/23 13:44	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/19/23 13:44	1
Chloroform	ND		0.025	0.00047	mg/L			02/19/23 13:44	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/19/23 13:44	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/19/23 13:44	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/19/23 13:44	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	94		80 - 120		02/19/23 13:44	1
Dibromofluoromethane (Surr)	104		71 - 121		02/19/23 13:44	1
4-Bromofluorobenzene (Surr)	110		80 - 120		02/19/23 13:44	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		02/19/23 13:44	1

Lab Sample ID: 240-180588-12 MS
Matrix: Solid
Analysis Batch: 562573

Client Sample ID: WC-WS1-COMP (A6-A10)
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier					
1,1-Dichloroethene	ND		1.00	0.955		mg/L		96	72 - 127	
1,2-Dichloroethane	ND		1.00	0.912		mg/L		91	70 - 120	
2-Butanone (MEK)	ND		2.00	1.76		mg/L		88	76 - 127	
Benzene	0.017	J	1.00	0.970		mg/L		95	80 - 124	
Carbon tetrachloride	ND		1.00	0.921		mg/L		92	63 - 120	
Chlorobenzene	ND		1.00	0.896		mg/L		90	80 - 120	
Chloroform	ND		1.00	0.997		mg/L		100	75 - 121	
Tetrachloroethene	ND		1.00	0.871		mg/L		87	68 - 120	
Trichloroethene	ND		1.00	0.913		mg/L		91	70 - 120	
Vinyl chloride	0.83		1.00	1.75		mg/L		93	55 - 144	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	109		71 - 121
4-Bromofluorobenzene (Surr)	113		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		76 - 120

Lab Sample ID: 240-180588-12 MSD
Matrix: Solid
Analysis Batch: 562573

Client Sample ID: WC-WS1-COMP (A6-A10)
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD	Limit
	Result	Qualifier		Result	Qualifier								
1,1-Dichloroethene	ND		1.00	0.992		mg/L		99	72 - 127	4	11		
1,2-Dichloroethane	ND		1.00	0.881		mg/L		88	70 - 120	3	10		
2-Butanone (MEK)	ND		2.00	1.82		mg/L		91	76 - 127	4	17		
Benzene	0.017	J	1.00	1.01		mg/L		100	80 - 124	4	10		

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180588-12 MSD

Matrix: Solid

Analysis Batch: 562573

Client Sample ID: WC-WS1-COMP (A6-A10)

Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Carbon tetrachloride	ND		1.00	0.909		mg/L		91	63 - 120	1	11
Chlorobenzene	ND		1.00	0.954		mg/L		95	80 - 120	6	10
Chloroform	ND		1.00	1.01		mg/L		101	75 - 121	1	10
Tetrachloroethene	ND		1.00	0.912		mg/L		91	68 - 120	5	10
Trichloroethene	ND		1.00	0.919		mg/L		92	70 - 120	1	10
Vinyl chloride	0.83		1.00	1.95		mg/L		113	55 - 144	11	11
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	97		80 - 120								
Dibromofluoromethane (Surr)	106		71 - 121								
4-Bromofluorobenzene (Surr)	114		80 - 120								
1,2-Dichloroethane-d4 (Surr)	93		76 - 120								

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-562526/22-A

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562526

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
Acetophenone	ND		0.10	0.011	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
Anthracene	ND		0.015	0.0024	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	
Atrazine	ND		0.20	0.036	mg/Kg		02/18/23 10:21	02/21/23 10:16	1	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562526/22-A

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562526

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Carbazole	ND		0.050	0.019	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Isophorone	ND		0.050	0.012	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Phenol	ND		0.050	0.0080	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/18/23 10:21	02/21/23 10:16	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/18/23 10:21	02/21/23 10:16	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	107		46 - 137	02/18/23 10:21	02/21/23 10:16	1
Phenol-d5 (Surr)	58		26 - 120	02/18/23 10:21	02/21/23 10:16	1
Nitrobenzene-d5 (Surr)	55		25 - 120	02/18/23 10:21	02/21/23 10:16	1
2-Fluorophenol (Surr)	52		20 - 120	02/18/23 10:21	02/21/23 10:16	1
2-Fluorobiphenyl (Surr)	74		34 - 120	02/18/23 10:21	02/21/23 10:16	1
2,4,6-Tribromophenol (Surr)	26		10 - 120	02/18/23 10:21	02/21/23 10:16	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562526/23-A

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.566		mg/Kg		85	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.368		mg/Kg		55	38 - 120
2,4,5-Trichlorophenol	0.667	0.698		mg/Kg		105	50 - 120
2,4,6-Trichlorophenol	0.667	0.688		mg/Kg		103	50 - 120
2,4-Dichlorophenol	0.667	0.625		mg/Kg		94	50 - 120
2,4-Dimethylphenol	0.667	0.421		mg/Kg		63	24 - 120
2,4-Dinitrophenol	1.33	1.11		mg/Kg		83	19 - 132
2,4-Dinitrotoluene	0.667	0.671		mg/Kg		101	64 - 120
2,6-Dinitrotoluene	0.667	0.759		mg/Kg		114	62 - 120
2-Chloronaphthalene	0.667	0.558		mg/Kg		84	51 - 120
2-Chlorophenol	0.667	0.486		mg/Kg		73	47 - 120
2-Methylnaphthalene	0.667	0.521		mg/Kg		78	38 - 120
2-Methylphenol	0.667	0.452		mg/Kg		68	45 - 120
2-Nitroaniline	0.667	0.558		mg/Kg		84	57 - 120
2-Nitrophenol	0.667	0.625		mg/Kg		94	51 - 120
3,3'-Dichlorobenzidine	1.33	1.34		mg/Kg		101	27 - 199
3-Nitroaniline	0.667	0.574		mg/Kg		86	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.21		mg/Kg		90	46 - 126
4-Bromophenyl phenyl ether	0.667	0.696		mg/Kg		104	65 - 120
4-Chloro-3-methylphenol	0.667	0.602		mg/Kg		90	51 - 120
4-Chloroaniline	0.667	0.460		mg/Kg		69	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.630		mg/Kg		95	59 - 120
4-Nitroaniline	0.667	0.695		mg/Kg		104	48 - 128
4-Nitrophenol	1.33	1.09		mg/Kg		82	43 - 120
Acenaphthene	0.667	0.586		mg/Kg		88	52 - 120
Acenaphthylene	0.667	0.650		mg/Kg		98	52 - 120
Acetophenone	0.667	0.434		mg/Kg		65	47 - 120
Anthracene	0.667	0.712		mg/Kg		107	64 - 120
Atrazine	1.33	1.72	*+	mg/Kg		129	71 - 125
Benzaldehyde	1.33	0.837		mg/Kg		63	42 - 120
Benzo[a]anthracene	0.667	0.775		mg/Kg		116	70 - 120
Benzo[a]pyrene	0.667	0.699		mg/Kg		105	63 - 125
Benzo[b]fluoranthene	0.667	0.666		mg/Kg		100	64 - 121
Benzo[g,h,i]perylene	0.667	0.691		mg/Kg		104	62 - 120
Benzo[k]fluoranthene	0.667	0.692		mg/Kg		104	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.456		mg/Kg		68	50 - 120
Bis(2-chloroethyl)ether	0.667	0.382		mg/Kg		57	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.709		mg/Kg		106	63 - 133
Butyl benzyl phthalate	0.667	0.697		mg/Kg		105	66 - 127
Caprolactam	1.33	1.40		mg/Kg		105	67 - 120
Carbazole	0.667	0.691		mg/Kg		104	61 - 129
Chrysene	0.667	0.733		mg/Kg		110	67 - 120
Dibenz(a,h)anthracene	0.667	0.722		mg/Kg		108	62 - 120
Dibenzofuran	0.667	0.573		mg/Kg		86	55 - 120
Diethyl phthalate	0.667	0.635		mg/Kg		95	61 - 120
Dimethyl phthalate	0.667	0.652		mg/Kg		98	64 - 120
Di-n-butyl phthalate	0.667	0.734		mg/Kg		110	70 - 129
Di-n-octyl phthalate	0.667	0.575		mg/Kg		86	64 - 129

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562526/23-A

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	0.667	0.735		mg/Kg		110	71 - 124
Fluorene	0.667	0.640		mg/Kg		96	58 - 120
Hexachlorobenzene	0.667	0.678		mg/Kg		102	59 - 120
Hexachlorobutadiene	0.667	0.525		mg/Kg		79	45 - 120
Hexachlorocyclopentadiene	0.667	0.418		mg/Kg		63	10 - 120
Hexachloroethane	0.667	0.421		mg/Kg		63	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.730		mg/Kg		109	65 - 122
Isophorone	0.667	0.456		mg/Kg		68	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.418		mg/Kg		63	48 - 120
N-Nitrosodiphenylamine	0.667	0.647		mg/Kg		97	64 - 120
Naphthalene	0.667	0.492		mg/Kg		74	34 - 120
Nitrobenzene	0.667	0.438		mg/Kg		66	48 - 120
Pentachlorophenol	1.33	0.766		mg/Kg		57	10 - 120
Phenanthrene	0.667	0.656		mg/Kg		98	60 - 120
Phenol	0.667	0.420		mg/Kg		63	48 - 120
Pyrene	0.667	0.773		mg/Kg		116	67 - 120
3 & 4 Methylphenol	0.667	0.468		mg/Kg		70	49 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	127		46 - 137
Phenol-d5 (Surr)	71		26 - 120
Nitrobenzene-d5 (Surr)	65		25 - 120
2-Fluorophenol (Surr)	69		20 - 120
2-Fluorobiphenyl (Surr)	90		34 - 120
2,4,6-Tribromophenol (Surr)	104		10 - 120

Lab Sample ID: LCS 240-562526/24-A

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562526

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	33		26 - 120
Nitrobenzene-d5 (Surr)	32		25 - 120
2-Fluorophenol (Surr)	26		20 - 120
2-Fluorobiphenyl (Surr)	44		34 - 120
2,4,6-Tribromophenol (Surr)	12		10 - 120

Lab Sample ID: 240-180588-11 MS

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: WC-WS1-A10 (2-3)

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
1,1'-Biphenyl	ND	F1	0.847	1.05	J F1	mg/Kg	☼	124	29 - 120
bis (2-chloroisopropyl) ether	ND	F1	0.847	ND	F1	mg/Kg	☼	0	10 - 120
2,4,5-Trichlorophenol	ND		0.847	ND		mg/Kg	☼	NC	35 - 120
2,4,6-Trichlorophenol	ND		0.847	ND		mg/Kg	☼	NC	18 - 120
2,4-Dichlorophenol	ND		0.847	ND		mg/Kg	☼	NC	21 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180588-11 MS

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: WC-WS1-A10 (2-3)

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
2,4-Dimethylphenol	ND		0.847	ND		mg/Kg	☼	NC	10 - 120
2,4-Dinitrophenol	ND		1.69	ND		mg/Kg	☼	NC	10 - 126
2,4-Dinitrotoluene	ND		0.847	ND		mg/Kg	☼	NC	46 - 120
2,6-Dinitrotoluene	ND		0.847	ND		mg/Kg	☼	NC	44 - 120
2-Chloronaphthalene	ND		0.847	0.644	J	mg/Kg	☼	76	33 - 120
2-Chlorophenol	ND		0.847	0.595	J	mg/Kg	☼	70	19 - 120
2-Methylnaphthalene	5.0		0.847	5.59	4	mg/Kg	☼	64	13 - 122
2-Methylphenol	ND	F1	0.847	ND	F1	mg/Kg	☼	0	12 - 120
2-Nitroaniline	ND		0.847	ND		mg/Kg	☼	NC	36 - 122
2-Nitrophenol	ND		0.847	0.593	J	mg/Kg	☼	70	28 - 120
3,3'-Dichlorobenzidine	ND	F1	1.69	ND	F1	mg/Kg	☼	0	10 - 179
3-Nitroaniline	ND		0.847	ND		mg/Kg	☼	NC	10 - 123
4,6-Dinitro-2-methylphenol	ND		1.69	3.02	J	mg/Kg	☼	NC	11 - 120
4-Bromophenyl phenyl ether	ND		0.847	0.718	J	mg/Kg	☼	85	49 - 120
4-Chloro-3-methylphenol	ND		0.847	ND		mg/Kg	☼	NC	35 - 120
4-Chloroaniline	ND	F1	0.847	ND	F1	mg/Kg	☼	0	10 - 120
4-Chlorophenyl phenyl ether	ND		0.847	0.654	J	mg/Kg	☼	77	45 - 120
4-Nitroaniline	ND		0.847	ND		mg/Kg	☼	NC	13 - 129
4-Nitrophenol	ND		1.69	ND		mg/Kg	☼	NC	28 - 123
Acenaphthene	0.15	J	0.847	0.854		mg/Kg	☼	83	33 - 120
Acenaphthylene	0.22	J	0.847	0.971		mg/Kg	☼	89	39 - 120
Acetophenone	ND		0.847	0.883	J	mg/Kg	☼	104	11 - 120
Anthracene	0.22	J	0.847	0.926		mg/Kg	☼	83	30 - 127
Atrazine	ND	*+	1.69	1.73	J	mg/Kg	☼	102	52 - 126
Benzaldehyde	ND	F1	1.69	ND	F1	mg/Kg	☼	0	13 - 120
Benzo[a]anthracene	0.60		0.847	1.46		mg/Kg	☼	102	24 - 137
Benzo[a]pyrene	0.49		0.847	1.13		mg/Kg	☼	75	28 - 136
Benzo[b]fluoranthene	0.77		0.847	1.48		mg/Kg	☼	84	21 - 142
Benzo[g,h,i]perylene	0.44		0.847	1.09		mg/Kg	☼	77	10 - 144
Benzo[k]fluoranthene	0.28	J	0.847	0.895		mg/Kg	☼	73	36 - 135
Bis(2-chloroethoxy)methane	ND		0.847	0.493	J	mg/Kg	☼	58	25 - 120
Bis(2-chloroethyl)ether	ND	F1	0.847	ND	F1	mg/Kg	☼	0	16 - 120
Bis(2-ethylhexyl) phthalate	1.9	F1	0.847	1.31	J F1	mg/Kg	☼	-64	37 - 143
Butyl benzyl phthalate	ND	F1	0.847	1.22	J F1	mg/Kg	☼	144	49 - 130
Caprolactam	ND		1.69	2.36	J	mg/Kg	☼	NC	37 - 127
Carbazole	ND		0.847	0.883	J	mg/Kg	☼	104	33 - 132
Chrysene	0.95		0.847	1.71		mg/Kg	☼	89	28 - 129
Dibenz(a,h)anthracene	ND		0.847	0.707		mg/Kg	☼	83	10 - 132
Dibenzofuran	1.3		0.847	2.03		mg/Kg	☼	88	33 - 120
Diethyl phthalate	ND	F1	0.847	ND	F1	mg/Kg	☼	0	48 - 120
Dimethyl phthalate	ND		0.847	0.714	J	mg/Kg	☼	84	45 - 120
Di-n-butyl phthalate	ND		0.847	ND		mg/Kg	☼	NC	40 - 137
Di-n-octyl phthalate	ND	F1	0.847	1.71	J F1	mg/Kg	☼	201	34 - 152
Fluoranthene	0.86		0.847	1.71		mg/Kg	☼	100	31 - 140
Fluorene	0.16	J	0.847	0.866		mg/Kg	☼	84	43 - 120
Hexachlorobenzene	ND		0.847	0.689		mg/Kg	☼	81	44 - 120
Hexachlorobutadiene	ND		0.847	0.489	J	mg/Kg	☼	58	13 - 120
Hexachlorocyclopentadiene	ND		0.847	ND		mg/Kg	☼	NC	10 - 120
Hexachloroethane	ND		0.847	0.485	J	mg/Kg	☼	57	10 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180588-11 MS

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: WC-WS1-A10 (2-3)

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier					
Indeno[1,2,3-cd]pyrene	0.34	J	0.847	0.953		mg/Kg	☼	72	10 - 139	
Isophorone	ND		0.847	0.504	J	mg/Kg	☼	59	27 - 120	
N-Nitrosodi-n-propylamine	ND		0.847	0.410	J	mg/Kg	☼	48	23 - 120	
N-Nitrosodiphenylamine	ND		0.847	0.977	J	mg/Kg	☼	115	30 - 128	
Naphthalene	3.1	F1	0.847	3.29		mg/Kg	☼	23	10 - 120	
Nitrobenzene	ND		0.847	0.444	J	mg/Kg	☼	52	19 - 120	
Pentachlorophenol	ND	F1	1.69	2.53	J F1	mg/Kg	☼	149	10 - 120	
Phenanthrene	2.4	F1	0.847	3.36		mg/Kg	☼	109	36 - 120	
Phenol	ND		0.847	0.551	J	mg/Kg	☼	65	10 - 120	
Pyrene	0.84		0.847	1.69		mg/Kg	☼	100	31 - 134	
3 & 4 Methylphenol	ND	F1	0.847	ND	F1	mg/Kg	☼	0	10 - 122	
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
Terphenyl-d14 (Surr)	91		46 - 137							
Phenol-d5 (Surr)	73		26 - 120							
Nitrobenzene-d5 (Surr)	52		25 - 120							
2-Fluorophenol (Surr)	65		20 - 120							
2-Fluorobiphenyl (Surr)	84		34 - 120							
2,4,6-Tribromophenol (Surr)	128	S1+	10 - 120							

Lab Sample ID: 240-180588-11 MSD

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: WC-WS1-A10 (2-3)

Prep Type: Total/NA

Prep Batch: 562526

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier		Result	Qualifier						Limit	Limit
1,1'-Biphenyl	ND	F1	0.837	1.03	J F1	mg/Kg	☼	123	29 - 120	2	45	
bis (2-chloroisopropyl) ether	ND	F1	0.837	ND	F1	mg/Kg	☼	0	10 - 120	NC	45	
2,4,5-Trichlorophenol	ND		0.837	ND		mg/Kg	☼	NC	35 - 120	NC	39	
2,4,6-Trichlorophenol	ND		0.837	ND		mg/Kg	☼	NC	18 - 120	NC	45	
2,4-Dichlorophenol	ND		0.837	ND		mg/Kg	☼	NC	21 - 120	NC	44	
2,4-Dimethylphenol	ND		0.837	ND		mg/Kg	☼	NC	10 - 120	NC	45	
2,4-Dinitrophenol	ND		1.67	ND		mg/Kg	☼	NC	10 - 126	NC	45	
2,4-Dinitrotoluene	ND		0.837	ND		mg/Kg	☼	NC	46 - 120	NC	45	
2,6-Dinitrotoluene	ND		0.837	ND		mg/Kg	☼	NC	44 - 120	NC	45	
2-Chloronaphthalene	ND		0.837	0.634	J	mg/Kg	☼	76	33 - 120	2	45	
2-Chlorophenol	ND		0.837	0.614	J	mg/Kg	☼	73	19 - 120	3	45	
2-Methylnaphthalene	5.0		0.837	4.60	4	mg/Kg	☼	-53	13 - 122	19	45	
2-Methylphenol	ND	F1	0.837	ND	F1	mg/Kg	☼	0	12 - 120	NC	45	
2-Nitroaniline	ND		0.837	ND		mg/Kg	☼	NC	36 - 122	NC	42	
2-Nitrophenol	ND		0.837	0.679	J	mg/Kg	☼	81	28 - 120	13	45	
3,3'-Dichlorobenzidine	ND	F1	1.67	ND	F1	mg/Kg	☼	0	10 - 179	NC	45	
3-Nitroaniline	ND		0.837	ND		mg/Kg	☼	NC	10 - 123	NC	45	
4,6-Dinitro-2-methylphenol	ND		1.67	2.97	J	mg/Kg	☼	NC	11 - 120	2	40	
4-Bromophenyl phenyl ether	ND		0.837	0.631	J	mg/Kg	☼	75	49 - 120	13	42	
4-Chloro-3-methylphenol	ND		0.837	ND		mg/Kg	☼	NC	35 - 120	NC	42	
4-Chloroaniline	ND	F1	0.837	ND	F1	mg/Kg	☼	0	10 - 120	NC	45	
4-Chlorophenyl phenyl ether	ND		0.837	0.642	J	mg/Kg	☼	77	45 - 120	2	44	
4-Nitroaniline	ND		0.837	ND		mg/Kg	☼	NC	13 - 129	NC	38	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180588-11 MSD

Client Sample ID: WC-WS1-A10 (2-3)

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 562828

Prep Batch: 562526

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
4-Nitrophenol	ND		1.67	ND		mg/Kg	☼	NC	28 - 123	NC	45
Acenaphthene	0.15	J	0.837	0.705		mg/Kg	☼	66	33 - 120	19	45
Acenaphthylene	0.22	J	0.837	0.913		mg/Kg	☼	83	39 - 120	6	45
Acetophenone	ND		0.837	0.940	J	mg/Kg	☼	112	11 - 120	6	45
Anthracene	0.22	J	0.837	0.825		mg/Kg	☼	72	30 - 127	12	45
Atrazine	ND	*+	1.67	1.45	J	mg/Kg	☼	87	52 - 126	17	34
Benzaldehyde	ND	F1	1.67	4.89	F1	mg/Kg	☼	292	13 - 120	NC	45
Benzo[a]anthracene	0.60		0.837	1.24		mg/Kg	☼	76	24 - 137	16	42
Benzo[a]pyrene	0.49		0.837	1.00		mg/Kg	☼	61	28 - 136	12	41
Benzo[b]fluoranthene	0.77		0.837	1.29		mg/Kg	☼	62	21 - 142	14	42
Benzo[g,h,i]perylene	0.44		0.837	0.965		mg/Kg	☼	63	10 - 144	12	40
Benzo[k]fluoranthene	0.28	J	0.837	0.794		mg/Kg	☼	62	36 - 135	12	44
Bis(2-chloroethoxy)methane	ND		0.837	0.566	J	mg/Kg	☼	68	25 - 120	14	45
Bis(2-chloroethyl)ether	ND	F1	0.837	0.401	J	mg/Kg	☼	48	16 - 120	NC	45
Bis(2-ethylhexyl) phthalate	1.9	F1	0.837	ND	F1	mg/Kg	☼	0	37 - 143	NC	38
Butyl benzyl phthalate	ND	F1	0.837	1.12	J F1	mg/Kg	☼	134	49 - 130	9	41
Caprolactam	ND		1.67	2.11	J	mg/Kg	☼	NC	37 - 127	11	45
Carbazole	ND		0.837	0.773	J	mg/Kg	☼	92	33 - 132	13	45
Chrysene	0.95		0.837	1.41		mg/Kg	☼	54	28 - 129	19	42
Dibenz(a,h)anthracene	ND		0.837	0.653		mg/Kg	☼	78	10 - 132	8	37
Dibenzofuran	1.3		0.837	1.76		mg/Kg	☼	57	33 - 120	14	43
Diethyl phthalate	ND	F1	0.837	ND	F1	mg/Kg	☼	0	48 - 120	NC	38
Dimethyl phthalate	ND		0.837	0.670	J	mg/Kg	☼	80	45 - 120	6	43
Di-n-butyl phthalate	ND		0.837	ND		mg/Kg	☼	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND	F1	0.837	1.67	J F1	mg/Kg	☼	199	34 - 152	2	39
Fluoranthene	0.86		0.837	1.44		mg/Kg	☼	69	31 - 140	17	45
Fluorene	0.16	J	0.837	0.750		mg/Kg	☼	71	43 - 120	14	39
Hexachlorobenzene	ND		0.837	0.581		mg/Kg	☼	69	44 - 120	17	39
Hexachlorobutadiene	ND		0.837	0.565	J	mg/Kg	☼	67	13 - 120	14	45
Hexachlorocyclopentadiene	ND		0.837	ND		mg/Kg	☼	NC	10 - 120	NC	45
Hexachloroethane	ND		0.837	0.664	J	mg/Kg	☼	79	10 - 120	31	45
Indeno[1,2,3-cd]pyrene	0.34	J	0.837	0.866		mg/Kg	☼	62	10 - 139	10	41
Isophorone	ND		0.837	0.560	J	mg/Kg	☼	67	27 - 120	11	45
N-Nitrosodi-n-propylamine	ND		0.837	0.514	J	mg/Kg	☼	61	23 - 120	23	45
N-Nitrosodiphenylamine	ND		0.837	0.837	J	mg/Kg	☼	100	30 - 128	15	44
Naphthalene	3.1	F1	0.837	2.99	F1	mg/Kg	☼	-13	10 - 120	10	45
Nitrobenzene	ND		0.837	0.489	J	mg/Kg	☼	58	19 - 120	10	45
Pentachlorophenol	ND	F1	1.67	2.45	J F1	mg/Kg	☼	146	10 - 120	3	45
Phenanthrene	2.4	F1	0.837	2.70	F1	mg/Kg	☼	32	36 - 120	22	41
Phenol	ND		0.837	0.547	J	mg/Kg	☼	65	10 - 120	1	45
Pyrene	0.84		0.837	1.49		mg/Kg	☼	77	31 - 134	13	43
3 & 4 Methylphenol	ND	F1	0.837	ND	F1	mg/Kg	☼	0	10 - 122	NC	45

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14 (Surr)	85		46 - 137
Phenol-d5 (Surr)	68		26 - 120
Nitrobenzene-d5 (Surr)	64		25 - 120
2-Fluorophenol (Surr)	72		20 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180588-11 MSD

Matrix: Solid

Analysis Batch: 562828

Client Sample ID: WC-WS1-A10 (2-3)

Prep Type: Total/NA

Prep Batch: 562526

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	81		34 - 120
2,4,6-Tribromophenol (Surr)	133	S1+	10 - 120

Lab Sample ID: MB 240-562656/4-A

Matrix: Solid

Analysis Batch: 562830

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562656

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/20/23 08:50	02/21/23 09:44	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/20/23 08:50	02/21/23 09:44	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/20/23 08:50	02/21/23 09:44	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/20/23 08:50	02/21/23 09:44	1
Pyridine	ND		0.0040	0.00036	mg/L		02/20/23 08:50	02/21/23 09:44	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/20/23 08:50	02/21/23 09:44	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/20/23 08:50	02/21/23 09:44	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/20/23 08:50	02/21/23 09:44	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/20/23 08:50	02/21/23 09:44	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/20/23 08:50	02/21/23 09:44	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/20/23 08:50	02/21/23 09:44	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/20/23 08:50	02/21/23 09:44	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	119		46 - 137	02/20/23 08:50	02/21/23 09:44	1
Phenol-d5 (Surr)	83		26 - 120	02/20/23 08:50	02/21/23 09:44	1
Nitrobenzene-d5 (Surr)	103		24 - 120	02/20/23 08:50	02/21/23 09:44	1
2-Fluorophenol (Surr)	89		19 - 120	02/20/23 08:50	02/21/23 09:44	1
2-Fluorobiphenyl (Surr)	106		33 - 120	02/20/23 08:50	02/21/23 09:44	1
2,4,6-Tribromophenol (Surr)	91		10 - 120	02/20/23 08:50	02/21/23 09:44	1

Lab Sample ID: LCS 240-562656/5-A

Matrix: Solid

Analysis Batch: 562830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562656

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0520		mg/L		65	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0713		mg/L		89	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0716		mg/L		89	51 - 120
2,4-Dinitrotoluene	0.0800	0.0776		mg/L		97	58 - 125
Pyridine	0.160	0.0630		mg/L		39	10 - 120
2-Methylphenol	0.0800	0.0704		mg/L		88	45 - 120
Hexachlorobenzene	0.0800	0.0647		mg/L		81	55 - 120
Hexachlorobutadiene	0.0800	0.0580		mg/L		73	41 - 120
Hexachloroethane	0.0800	0.0611		mg/L		76	39 - 120
Nitrobenzene	0.0800	0.0721		mg/L		90	47 - 120
Pentachlorophenol	0.160	0.125		mg/L		78	19 - 132
3 & 4 Methylphenol	0.0800	0.0655		mg/L		82	40 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562656/5-A

Matrix: Solid

Analysis Batch: 562830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562656

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	113		46 - 137
Phenol-d5 (Surr)	74		26 - 120
Nitrobenzene-d5 (Surr)	99		24 - 120
2-Fluorophenol (Surr)	77		19 - 120
2-Fluorobiphenyl (Surr)	96		33 - 120
2,4,6-Tribromophenol (Surr)	84		10 - 120

Lab Sample ID: 240-180588-6 MS

Matrix: Solid

Analysis Batch: 562830

Client Sample ID: WC-WS1-COMP (A1-A5)

Prep Type: TCLP

Prep Batch: 562656

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,4-Dichlorobenzene	ND	F1	0.0800	0.107	F1	mg/L		133	37 - 120
2,4,5-Trichlorophenol	ND	F1	0.0800	0.147	F1	mg/L		183	25 - 128
2,4,6-Trichlorophenol	ND	F1	0.0800	0.144	F1	mg/L		181	23 - 122
2,4-Dinitrotoluene	ND	F1	0.0800	0.154	F1	mg/L		192	27 - 127
Pyridine	ND		0.160	0.170		mg/L		106	10 - 120
2-Methylphenol	ND	F1	0.0800	0.141	F1	mg/L		177	22 - 120
Hexachlorobenzene	ND	F1	0.0800	0.114	F1	mg/L		143	18 - 123
Hexachlorobutadiene	ND	F1	0.0800	0.123	F1	mg/L		154	10 - 120
Hexachloroethane	ND	F1	0.0800	0.125	F1	mg/L		157	10 - 120
Nitrobenzene	ND	F1	0.0800	0.146	F1	mg/L		183	26 - 120
Pentachlorophenol	ND		0.160	0.195		mg/L		122	10 - 132
3 & 4 Methylphenol	ND	F1	0.0800	0.142	F1	mg/L		178	16 - 123

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	216	S1+	46 - 137
Phenol-d5 (Surr)	161	S1+	26 - 120
Nitrobenzene-d5 (Surr)	182	S1+	24 - 120
2-Fluorophenol (Surr)	164	S1+	19 - 120
2-Fluorobiphenyl (Surr)	177	S1+	33 - 120
2,4,6-Tribromophenol (Surr)	164	S1+	10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-562657/4-A

Matrix: Solid

Analysis Batch: 562736

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562657

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/20/23 08:53	02/20/23 14:24	1
Endrin	ND		0.00050	0.0000065	mg/L		02/20/23 08:53	02/20/23 14:24	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/20/23 08:53	02/20/23 14:24	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/20/23 08:53	02/20/23 14:24	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/20/23 08:53	02/20/23 14:24	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/20/23 08:53	02/20/23 14:24	1
Toxaphene	ND		0.020	0.000058	mg/L		02/20/23 08:53	02/20/23 14:24	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-562657/4-A
Matrix: Solid
Analysis Batch: 562736

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562657

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	81		10 - 145	02/20/23 08:53	02/20/23 14:24	1
DCB Decachlorobiphenyl	85		10 - 145	02/20/23 08:53	02/20/23 14:24	1
Tetrachloro-m-xylene	68		10 - 123	02/20/23 08:53	02/20/23 14:24	1
Tetrachloro-m-xylene	78		10 - 123	02/20/23 08:53	02/20/23 14:24	1

Lab Sample ID: LCS 240-562657/5-A
Matrix: Solid
Analysis Batch: 562736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562657

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Endrin	0.00100	0.000924		mg/L		92	36 - 120
Heptachlor	0.00100	0.000830		mg/L		83	29 - 120
Heptachlor epoxide	0.00100	0.000875		mg/L		87	36 - 120
gamma-BHC (Lindane)	0.00100	0.000794		mg/L		79	23 - 120
Methoxychlor	0.00100	0.00110		mg/L		110	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	84		10 - 145
DCB Decachlorobiphenyl	87		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	74		10 - 123

Lab Sample ID: 240-180588-12 MS
Matrix: Solid
Analysis Batch: 562736

Client Sample ID: WC-WS1-COMP (A6-A10)
Prep Type: TCLP
Prep Batch: 562657

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Endrin	ND		0.00100	0.00109		mg/L		109	58 - 120
Heptachlor	ND		0.00100	0.000952		mg/L		95	42 - 120
Heptachlor epoxide	ND		0.00100	0.000992		mg/L		99	54 - 120
gamma-BHC (Lindane)	ND		0.00100	0.000891		mg/L		89	32 - 120
Methoxychlor	ND		0.00100	0.00126		mg/L		126	11 - 159

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	86		10 - 145
DCB Decachlorobiphenyl	89		10 - 145
Tetrachloro-m-xylene	71		10 - 123
Tetrachloro-m-xylene	71		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-562650/1-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562650

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1221	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 240-562650/1-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562650

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1232	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1242	ND		50	19	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1248	ND		50	17	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1254	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1260	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1262	ND		50	22	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1268	ND		50	16	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Polychlorinated biphenyls, Total	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	53		10 - 149	02/20/23 08:20	02/20/23 19:48	1
DCB Decachlorobiphenyl	93		10 - 174	02/20/23 08:20	02/20/23 19:48	1

Lab Sample ID: LCS 240-562650/2-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562650

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Aroclor-1016	1000	780		ug/Kg		78	28 - 140
Aroclor-1260	1000	955		ug/Kg		96	39 - 153

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	94		10 - 149
DCB Decachlorobiphenyl	123		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-346721/1-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 04:58	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 04:58	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	02/21/23 20:16	02/22/23 04:58	1

Lab Sample ID: MB 410-346721/2-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:26	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:26	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	55		26 - 136	02/21/23 20:16	02/22/23 05:26	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-346721/3-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:54	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:54	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136				02/21/23 20:16	02/22/23 05:54	1

Lab Sample ID: MB 410-346721/4-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:22	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:22	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136				02/21/23 20:16	02/22/23 06:22	1

Lab Sample ID: MB 410-346721/5-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:49	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:49	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				02/21/23 20:16	02/22/23 06:49	1

Lab Sample ID: LCS 410-346721/6-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00397	J	mg/L		79	58 - 148
2,4-D	0.0502	0.0389	J	mg/L		78	42 - 147
Surrogate	%Recovery	LCS Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136				

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-346502/1-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-346502/1-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346502

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1
Isotope Dilution									
	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
13C8 PFOA	74		26 - 159				02/21/23 12:53	02/21/23 16:49	1
13C8 PFOS	89		41 - 154				02/21/23 12:53	02/21/23 16:49	1

Lab Sample ID: LCS 410-346502/2-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346502

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorooctanoic acid			25.0	20.9		ng/g		84	59 - 131
Perfluorooctanesulfonic acid			23.1	20.9		ng/g		90	61 - 126
Isotope Dilution									
	LCS	LCS	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
13C8 PFOA	85		26 - 159						
13C8 PFOS	91		41 - 154						

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-562589/2-A
Matrix: Solid
Analysis Batch: 562756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562589

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 11:48	1
Barium	ND		0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 11:48	1
Cadmium	ND		0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 11:48	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 11:48	1
Lead	ND		0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 11:48	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 11:48	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 11:48	1

Lab Sample ID: LCS 240-562589/3-A
Matrix: Solid
Analysis Batch: 562756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562589

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Arsenic			2.00	2.00		mg/L		100	50 - 150
Barium			2.00	1.88		mg/L		94	50 - 150
Cadmium			1.00	0.978		mg/L		98	50 - 150
Chromium			1.00	0.946		mg/L		95	50 - 150
Lead			1.00	0.928		mg/L		93	50 - 150
Selenium			2.00	2.02		mg/L		101	50 - 150
Silver			0.100	0.102		mg/L		102	50 - 150

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LB 240-562550/1-B
Matrix: Solid
Analysis Batch: 562756

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562589

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/19/23 13:00	02/20/23 11:44	1
Barium	0.00266	J	0.50	0.0013	mg/L		02/19/23 13:00	02/20/23 11:44	1
Cadmium	ND		0.050	0.00020	mg/L		02/19/23 13:00	02/20/23 11:44	1
Chromium	ND		0.050	0.0040	mg/L		02/19/23 13:00	02/20/23 11:44	1
Lead	0.00336	J	0.050	0.0028	mg/L		02/19/23 13:00	02/20/23 11:44	1
Selenium	ND		0.050	0.0060	mg/L		02/19/23 13:00	02/20/23 11:44	1
Silver	ND		0.050	0.00062	mg/L		02/19/23 13:00	02/20/23 11:44	1

Lab Sample ID: 240-180588-1 MS
Matrix: Solid
Analysis Batch: 562756

Client Sample ID: WC-WS1-A1 (2-3)
Prep Type: TCLP
Prep Batch: 562589

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Arsenic	0.0062	J	5.00	5.12		mg/L		102	75 - 125
Barium	0.48	J B	50.0	48.9		mg/L		97	75 - 125
Cadmium	0.0015	J	1.00	1.03		mg/L		103	75 - 125
Chromium	ND		5.00	4.81		mg/L		96	75 - 125
Lead	0.012	J B	5.00	4.89		mg/L		98	75 - 125
Selenium	ND		1.00	1.06		mg/L		106	75 - 125
Silver	ND		1.00	0.996		mg/L		100	75 - 125

Lab Sample ID: 240-180588-1 MSD
Matrix: Solid
Analysis Batch: 562756

Client Sample ID: WC-WS1-A1 (2-3)
Prep Type: TCLP
Prep Batch: 562589

Analyte	Sample		Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	
	Result	Qualifier		Result	Qualifier					RPD	Limit
Arsenic	0.0062	J	5.00	5.02		mg/L		100	75 - 125	2	20
Barium	0.48	J B	50.0	48.5		mg/L		96	75 - 125	1	20
Cadmium	0.0015	J	1.00	1.00		mg/L		100	75 - 125	3	20
Chromium	ND		5.00	4.77		mg/L		95	75 - 125	1	20
Lead	0.012	J B	5.00	4.79		mg/L		95	75 - 125	2	20
Selenium	ND		1.00	1.00		mg/L		100	75 - 125	5	20
Silver	ND		1.00	0.987		mg/L		99	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-562590/2-A
Matrix: Solid
Analysis Batch: 562766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562590

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:21	1

Lab Sample ID: LCS 240-562590/3-A
Matrix: Solid
Analysis Batch: 562766

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562590

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.00500	0.00548		mg/L		110	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-562550/1-C
Matrix: Solid
Analysis Batch: 562766

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562590

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		02/19/23 13:00	02/20/23 13:19	1

Lab Sample ID: 240-180588-1 MS
Matrix: Solid
Analysis Batch: 562766

Client Sample ID: WC-WS1-A1 (2-3)
Prep Type: TCLP
Prep Batch: 562590

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Mercury	ND		0.00500	0.00528		mg/L		106	80 - 120

Lab Sample ID: 240-180588-1 MSD
Matrix: Solid
Analysis Batch: 562766

Client Sample ID: WC-WS1-A1 (2-3)
Prep Type: TCLP
Prep Batch: 562590

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Mercury	ND		0.00500	0.00538		mg/L		108	80 - 120	2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180588-1 DU
Matrix: Solid
Analysis Batch: 562527

Client Sample ID: WC-WS1-A1 (2-3)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU DU		Unit	D	RPD	RPD Limit
			Result	Qualifier				
Percent Solids	78.4		89.3		%		13	20
Percent Moisture	21.6		10.7	F3	%		67	20

Lab Sample ID: 240-180588-11 DU
Matrix: Solid
Analysis Batch: 562527

Client Sample ID: WC-WS1-A10 (2-3)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU DU		Unit	D	RPD	RPD Limit
			Result	Qualifier				
Percent Solids	78.5		85.8		%		9	20
Percent Moisture	21.5		14.2	F3	%		40	20

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

GC/MS VOA

Composite Batch: 562549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	Composite	
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	
240-180588-12 MSD	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	

Leach Batch: 562552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	1311	562549
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549
LB 240-562552/1-A MB	Method Blank	TCLP	Solid	1311	
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549
240-180588-12 MSD	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549

Analysis Batch: 562573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	8260D	562552
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	8260D	562552
LB 240-562552/1-A MB	Method Blank	TCLP	Solid	8260D	562552
LCS 240-562573/10	Lab Control Sample	Total/NA	Solid	8260D	
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	8260D	562552
240-180588-12 MSD	WC-WS1-COMP (A6-A10)	TCLP	Solid	8260D	562552

Prep Batch: 562767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	5035	
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	5035	
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	5035	
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	5035	
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	5035	
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	5035	
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	5035	
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	5035	
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	5035	
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	5035	
MB 240-562767/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562767/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-180588-11 MS	WC-WS1-A10 (2-3)	Total/NA	Solid	5035	
240-180588-11 MSD	WC-WS1-A10 (2-3)	Total/NA	Solid	5035	

Analysis Batch: 563073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	8260D	562767
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	8260D	562767
MB 240-562767/1-A	Method Blank	Total/NA	Solid	8260D	562767
LCS 240-562767/2-A	Lab Control Sample	Total/NA	Solid	8260D	562767

Analysis Batch: 563092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	8260D	562767
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	8260D	562767
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	8260D	562767

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

GC/MS VOA (Continued)

Analysis Batch: 563092 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	8260D	562767
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	8260D	562767
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	8260D	562767
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	8260D	562767
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	8260D	562767
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	8260D	562767
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	8260D	562767

Analysis Batch: 563099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	8260D	562767
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	8260D	562767
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	8260D	562767
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	8260D	562767
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	8260D	562767
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	8260D	562767
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	8260D	562767
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	8260D	562767
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	8260D	562767
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	8260D	562767
MB 240-562767/1-A	Method Blank	Total/NA	Solid	8260D	562767
LCS 240-562767/2-A	Lab Control Sample	Total/NA	Solid	8260D	562767
240-180588-11 MS	WC-WS1-A10 (2-3)	Total/NA	Solid	8260D	562767
240-180588-11 MSD	WC-WS1-A10 (2-3)	Total/NA	Solid	8260D	562767

GC/MS Semi VOA

Prep Batch: 562526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	3540C	
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	3540C	
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	3540C	
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	3540C	
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	3540C	
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	3540C	
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	3540C	
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	3540C	
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	3540C	
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	3540C	
MB 240-562526/22-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-562526/23-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562526/24-A	Lab Control Sample	Total/NA	Solid	3540C	
240-180588-11 MS	WC-WS1-A10 (2-3)	Total/NA	Solid	3540C	
240-180588-11 MSD	WC-WS1-A10 (2-3)	Total/NA	Solid	3540C	

Composite Batch: 562549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	Composite	
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	
240-180588-6 MS	WC-WS1-COMP (A1-A5)	TCLP	Solid	Composite	

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

GC/MS Semi VOA

Leach Batch: 562551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	1311	562549
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549
240-180588-6 MS	WC-WS1-COMP (A1-A5)	TCLP	Solid	1311	562549

Prep Batch: 562656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	3510C	562551
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	3510C	562551
MB 240-562656/4-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562656/5-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180588-6 MS	WC-WS1-COMP (A1-A5)	TCLP	Solid	3510C	562551

Analysis Batch: 562828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	8270E	562526
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	8270E	562526
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	8270E	562526
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	8270E	562526
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	8270E	562526
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	8270E	562526
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	8270E	562526
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	8270E	562526
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	8270E	562526
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	8270E	562526
MB 240-562526/22-A	Method Blank	Total/NA	Solid	8270E	562526
LCS 240-562526/23-A	Lab Control Sample	Total/NA	Solid	8270E	562526
LCS 240-562526/24-A	Lab Control Sample	Total/NA	Solid	8270E	562526
240-180588-11 MS	WC-WS1-A10 (2-3)	Total/NA	Solid	8270E	562526
240-180588-11 MSD	WC-WS1-A10 (2-3)	Total/NA	Solid	8270E	562526

Analysis Batch: 562830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	8270E	562656
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	8270E	562656
MB 240-562656/4-A	Method Blank	Total/NA	Solid	8270E	562656
LCS 240-562656/5-A	Lab Control Sample	Total/NA	Solid	8270E	562656
240-180588-6 MS	WC-WS1-COMP (A1-A5)	TCLP	Solid	8270E	562656

GC Semi VOA

Leach Batch: 346494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	1311	
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	

Prep Batch: 346721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	8151A	346494
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	8151A	346494
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

GC Semi VOA (Continued)

Prep Batch: 346721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 346737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	8151A	346721
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	8151A	346721
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	346721
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	346721

Composite Batch: 562549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	Composite	
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	Composite	

Leach Batch: 562551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	1311	562549
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	1311	562549

Composite Batch: 562586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	Composite	
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	Composite	

Prep Batch: 562650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	3546	562586
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	3546	562586
MB 240-562650/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 562657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	3510C	562551
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	3510C	562551
MB 240-562657/4-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562657/5-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	3510C	562551

Analysis Batch: 562736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	TCLP	Solid	8081B	562657

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

GC Semi VOA (Continued)

Analysis Batch: 562736 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-12	WC-WS1-COMP (A6-A10)	TCLP	Solid	8081B	562657
MB 240-562657/4-A	Method Blank	Total/NA	Solid	8081B	562657
LCS 240-562657/5-A	Lab Control Sample	Total/NA	Solid	8081B	562657
240-180588-12 MS	WC-WS1-COMP (A6-A10)	TCLP	Solid	8081B	562657

Analysis Batch: 562759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	8082A	562650
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	8082A	562650
MB 240-562650/1-A	Method Blank	Total/NA	Solid	8082A	562650
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	8082A	562650

LCMS

Prep Batch: 346502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	537 (mod)	
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	537 (mod)	
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	

Cleanup Batch: 346507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	Extract Aliquot	346502
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	Extract Aliquot	346502
MB 410-346502/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	346502
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	346502

Analysis Batch: 346558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	537 IDA	346507
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	537 IDA	346507
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 IDA	346507
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	346507

Metals

Leach Batch: 562550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	TCLP	Solid	1311	
240-180588-2	WC-WS1-A2 (2.5-3.5)	TCLP	Solid	1311	
240-180588-3	WC-WS1-A3 (3-4)	TCLP	Solid	1311	
240-180588-4	WC-WS1-A4 (5-6)	TCLP	Solid	1311	
240-180588-5	WC-WS1-A5 (1-2)	TCLP	Solid	1311	
240-180588-7	WC-WS1-A6 (3-4)	TCLP	Solid	1311	
240-180588-8	WC-WS1-A7 (2-3)	TCLP	Solid	1311	
240-180588-9	WC-WS1-A8 (4-5)	TCLP	Solid	1311	
240-180588-10	WC-WS1-A9 (3-4)	TCLP	Solid	1311	
240-180588-11	WC-WS1-A10 (2-3)	TCLP	Solid	1311	
LB 240-562550/1-B	Method Blank	TCLP	Solid	1311	
LB 240-562550/1-C	Method Blank	TCLP	Solid	1311	
240-180588-1 MS	WC-WS1-A1 (2-3)	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Metals (Continued)

Leach Batch: 562550 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1 MSD	WC-WS1-A1 (2-3)	TCLP	Solid	1311	

Prep Batch: 562589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	TCLP	Solid	3010A	562550
240-180588-2	WC-WS1-A2 (2.5-3.5)	TCLP	Solid	3010A	562550
240-180588-3	WC-WS1-A3 (3-4)	TCLP	Solid	3010A	562550
240-180588-4	WC-WS1-A4 (5-6)	TCLP	Solid	3010A	562550
240-180588-5	WC-WS1-A5 (1-2)	TCLP	Solid	3010A	562550
240-180588-7	WC-WS1-A6 (3-4)	TCLP	Solid	3010A	562550
240-180588-8	WC-WS1-A7 (2-3)	TCLP	Solid	3010A	562550
240-180588-9	WC-WS1-A8 (4-5)	TCLP	Solid	3010A	562550
240-180588-10	WC-WS1-A9 (3-4)	TCLP	Solid	3010A	562550
240-180588-11	WC-WS1-A10 (2-3)	TCLP	Solid	3010A	562550
LB 240-562550/1-B	Method Blank	TCLP	Solid	3010A	562550
MB 240-562589/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-562589/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180588-1 MS	WC-WS1-A1 (2-3)	TCLP	Solid	3010A	562550
240-180588-1 MSD	WC-WS1-A1 (2-3)	TCLP	Solid	3010A	562550

Prep Batch: 562590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562550
240-180588-2	WC-WS1-A2 (2.5-3.5)	TCLP	Solid	7470A	562550
240-180588-3	WC-WS1-A3 (3-4)	TCLP	Solid	7470A	562550
240-180588-4	WC-WS1-A4 (5-6)	TCLP	Solid	7470A	562550
240-180588-5	WC-WS1-A5 (1-2)	TCLP	Solid	7470A	562550
240-180588-7	WC-WS1-A6 (3-4)	TCLP	Solid	7470A	562550
240-180588-8	WC-WS1-A7 (2-3)	TCLP	Solid	7470A	562550
240-180588-9	WC-WS1-A8 (4-5)	TCLP	Solid	7470A	562550
240-180588-10	WC-WS1-A9 (3-4)	TCLP	Solid	7470A	562550
240-180588-11	WC-WS1-A10 (2-3)	TCLP	Solid	7470A	562550
LB 240-562550/1-C	Method Blank	TCLP	Solid	7470A	562550
MB 240-562590/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-562590/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180588-1 MS	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562550
240-180588-1 MSD	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562550

Analysis Batch: 562756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	TCLP	Solid	6010D	562589
240-180588-2	WC-WS1-A2 (2.5-3.5)	TCLP	Solid	6010D	562589
240-180588-3	WC-WS1-A3 (3-4)	TCLP	Solid	6010D	562589
240-180588-4	WC-WS1-A4 (5-6)	TCLP	Solid	6010D	562589
240-180588-5	WC-WS1-A5 (1-2)	TCLP	Solid	6010D	562589
240-180588-7	WC-WS1-A6 (3-4)	TCLP	Solid	6010D	562589
240-180588-8	WC-WS1-A7 (2-3)	TCLP	Solid	6010D	562589
240-180588-9	WC-WS1-A8 (4-5)	TCLP	Solid	6010D	562589
240-180588-10	WC-WS1-A9 (3-4)	TCLP	Solid	6010D	562589
240-180588-11	WC-WS1-A10 (2-3)	TCLP	Solid	6010D	562589
LB 240-562550/1-B	Method Blank	TCLP	Solid	6010D	562589

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Metals (Continued)

Analysis Batch: 562756 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-562589/2-A	Method Blank	Total/NA	Solid	6010D	562589
LCS 240-562589/3-A	Lab Control Sample	Total/NA	Solid	6010D	562589
240-180588-1 MS	WC-WS1-A1 (2-3)	TCLP	Solid	6010D	562589
240-180588-1 MSD	WC-WS1-A1 (2-3)	TCLP	Solid	6010D	562589

Analysis Batch: 562766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562590
240-180588-2	WC-WS1-A2 (2.5-3.5)	TCLP	Solid	7470A	562590
240-180588-3	WC-WS1-A3 (3-4)	TCLP	Solid	7470A	562590
240-180588-4	WC-WS1-A4 (5-6)	TCLP	Solid	7470A	562590
240-180588-5	WC-WS1-A5 (1-2)	TCLP	Solid	7470A	562590
240-180588-7	WC-WS1-A6 (3-4)	TCLP	Solid	7470A	562590
240-180588-8	WC-WS1-A7 (2-3)	TCLP	Solid	7470A	562590
240-180588-9	WC-WS1-A8 (4-5)	TCLP	Solid	7470A	562590
240-180588-10	WC-WS1-A9 (3-4)	TCLP	Solid	7470A	562590
240-180588-11	WC-WS1-A10 (2-3)	TCLP	Solid	7470A	562590
LB 240-562550/1-C	Method Blank	TCLP	Solid	7470A	562590
MB 240-562590/2-A	Method Blank	Total/NA	Solid	7470A	562590
LCS 240-562590/3-A	Lab Control Sample	Total/NA	Solid	7470A	562590
240-180588-1 MS	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562590
240-180588-1 MSD	WC-WS1-A1 (2-3)	TCLP	Solid	7470A	562590

General Chemistry

Analysis Batch: 562527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-1	WC-WS1-A1 (2-3)	Total/NA	Solid	Moisture	
240-180588-2	WC-WS1-A2 (2.5-3.5)	Total/NA	Solid	Moisture	
240-180588-3	WC-WS1-A3 (3-4)	Total/NA	Solid	Moisture	
240-180588-4	WC-WS1-A4 (5-6)	Total/NA	Solid	Moisture	
240-180588-5	WC-WS1-A5 (1-2)	Total/NA	Solid	Moisture	
240-180588-7	WC-WS1-A6 (3-4)	Total/NA	Solid	Moisture	
240-180588-8	WC-WS1-A7 (2-3)	Total/NA	Solid	Moisture	
240-180588-9	WC-WS1-A8 (4-5)	Total/NA	Solid	Moisture	
240-180588-10	WC-WS1-A9 (3-4)	Total/NA	Solid	Moisture	
240-180588-11	WC-WS1-A10 (2-3)	Total/NA	Solid	Moisture	
240-180588-1 DU	WC-WS1-A1 (2-3)	Total/NA	Solid	Moisture	
240-180588-11 DU	WC-WS1-A10 (2-3)	Total/NA	Solid	Moisture	

Analysis Batch: 562608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	Moisture	
240-180588-12	WC-WS1-COMP (A6-A10)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 11:57
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:25
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A1 (2-3)

Lab Sample ID: 240-180588-1

Date Collected: 02/17/23 14:47

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 10:35
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		200	563092	CS	EET CAN	02/23/23 11:22
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 11:50

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 12:39
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:33
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A2 (2.5-3.5)

Lab Sample ID: 240-180588-2

Date Collected: 02/17/23 14:57

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 11:00
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		100	563073	SAM	EET CAN	02/23/23 00:01
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		200	563092	CS	EET CAN	02/23/23 11:48
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 12:15

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 12:44
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:35
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A3 (3-4)

Lab Sample ID: 240-180588-3

Date Collected: 02/17/23 15:10

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		5	563099	SAM	EET CAN	02/23/23 16:22
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		125	563092	CS	EET CAN	02/23/23 12:13
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 12:39

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 12:48
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:37
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A4 (5-6)

Lab Sample ID: 240-180588-4

Date Collected: 02/17/23 15:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 11:53
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		333.333 3	563073	SAM	EET CAN	02/23/23 00:51
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 13:03

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 12:52
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:39
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A5 (1-2)

Lab Sample ID: 240-180588-5

Date Collected: 02/17/23 15:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 12:18
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		200	563092	CS	EET CAN	02/23/23 12:39
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 13:27

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562552	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Analysis	8260D		1	562573	HMB	EET CAN	02/19/23 14:31
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562551	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3510C			562656	SDE	EET CAN	02/20/23 08:50
TCLP	Analysis	8270E		10	562830	JMG	EET CAN	02/21/23 15:28
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562551	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3510C			562657	SDE	EET CAN	02/20/23 08:53
TCLP	Analysis	8081B		1	562736	BPM	EET CAN	02/20/23 14:56
TCLP	Leach	1311			346494	UNWS	ELLE	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 07:45
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 86.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562586	DRJ	EET CAN	02/18/23 13:11
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 00:09
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 17:11

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 12:57
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:46
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A6 (3-4)

Lab Sample ID: 240-180588-7

Date Collected: 02/17/23 16:17

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 12:42
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		111.11	563092	CS	EET CAN	02/23/23 15:10
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 13:51

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 13:01
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:48
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A7 (2-3)

Lab Sample ID: 240-180588-8

Date Collected: 02/17/23 16:27

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		4	563099	SAM	EET CAN	02/23/23 16:46
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		333.333 3	563092	CS	EET CAN	02/23/23 14:19
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 14:15

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 13:06
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:50
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A8 (4-5)

Lab Sample ID: 240-180588-9

Date Collected: 02/17/23 16:37

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 13:31
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		333.333 3	563092	CS	EET CAN	02/23/23 14:45
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 14:39

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 13:10
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:52
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-A9 (3-4)

Lab Sample ID: 240-180588-10

Date Collected: 02/17/23 16:43

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 13:56
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		66.6666	563092	CS	EET CAN	02/23/23 13:04
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		125	563092	CS	EET CAN	02/23/23 15:35
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 16:16

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3010A			562589	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	6010D		1	562756	KLC	EET CAN	02/20/23 13:15
TCLP	Leach	1311			562550	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	7470A			562590	AJC	EET CAN	02/19/23 13:00
TCLP	Analysis	7470A		1	562766	DSH	EET CAN	02/20/23 13:54
Total/NA	Analysis	Moisture		1	562527	MED	EET CAN	02/18/23 10:23

Client Sample ID: WC-WS1-A10 (2-3)

Lab Sample ID: 240-180588-11

Date Collected: 02/17/23 16:51

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 14:20
Total/NA	Prep	5035			562767	LAM	EET CAN	02/20/23 14:17
Total/NA	Analysis	8260D		40	563092	CS	EET CAN	02/23/23 13:29
Total/NA	Prep	3540C			562526	BMB	EET CAN	02/18/23 10:21
Total/NA	Analysis	8270E		20	562828	JMG	EET CAN	02/21/23 15:04

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562552	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Analysis	8260D		1	562573	HMB	EET CAN	02/19/23 14:54
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562551	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3510C			562656	SDE	EET CAN	02/20/23 08:50
TCLP	Analysis	8270E		10	562830	JMG	EET CAN	02/21/23 16:16

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562549	KLE	EET CAN	02/18/23 13:11
TCLP	Leach	1311			562551	KLE	EET CAN	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	3510C			562657	SDE	EET CAN	02/20/23 08:53
TCLP	Analysis	8081B		1	562736	BPM	EET CAN	02/20/23 15:12
TCLP	Leach	1311			346494	UNWS	ELLE	02/18/23 14:25 - 02/19/23 08:20 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 08:13
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-COMP (A6-A10)

Lab Sample ID: 240-180588-12

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 83.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562586	DRJ	EET CAN	02/18/23 13:11
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 00:25
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 17:22

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

5-4/5.5

Address: _____

TAL-8210

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact
 Company Name: Arcadis - (Carolyn Brown)
 Address: 7575 Huntington Park Dr
 City/State/Zip: Columbus OH
 Phone: 614-271-6586
 Fax: _____
 Project Name: NS EAST PALESTONE OH
 Site: _____
 PO# 30169678

Project Manager: John Artrip
Tel/Email: Carolyn.Brown@arcadis.com
Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below RUSH
 2 weeks
 1 week
 2 days
 1 day

Site Contact: Michelle Clayton **Date:** 2-17-23
Lab Contact: Mike Delmonico **Carrier:** _____

COC No: _____ of _____ COCs
 Sampler: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS/MSD (Y/N)		Total VOC	Total SVOC	TCLP Metals	DFA5/DFQA	TCLP VOC	TCLP SVOC	TCLP PEST	TCLP HERBS	TOTAL PHS	Carrier
						Y	N	Y	N										
WC-WS1-A1 (2-3)	2/17/23	1447	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A2 (2.5-3.5)	2/17/23	1457	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A3 (3-4)	2/17/23	1510	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A4 (5.6)	2/17/23	1527	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A5 (1-2)	2/17/23	1537	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-COMP(A1-A5)	2/17/23	-	LAB Comp	S	X	N	N	N	N	X	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A6 (3-4)	2/17/23	1617	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A7 (2-3)	2/17/23	1627	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-AB (4-5)	2/17/23	1637	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A9 (3-4)	2/17/23	1643	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-A10 (2-3)	2/17/23	1657	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	X	
WC-WS1-COMP (A6-A10)	2/17/23	-	LAB Comp	S	X	N	N	N	N	X	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: Please List any EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. LD43 VINYL CHLORIDE

Non-Hazard Flammable Skin Irritant Poison B Unknown

Return to Client Disposal by Lab Archive for _____ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Special Instructions/QC Requirements & Comments:
LAB TO GERATE COMPOSITE SAMPLES CONTAINING 5 GRAB SAMPLES EACH

Custody Seal No.: _____
 Relinquished by: Michelle Clayton **Date/Time:** 2/17/23 1424
 Relinquished by: Arcadis **Date/Time:** 2/17/23 2100
 Relinquished by: _____ **Date/Time:** _____
 Relinquished by: _____ **Date/Time:** _____

Received by: [Signature] **Date/Time:** _____
Received by: _____ **Date/Time:** _____
Received in Laboratory by: _____ **Date/Time:** _____

Company: Arcadis **Company:** EFTNC

Therm ID No.: _____
Cooler Temp. (°C): _____
Obs d: _____
Corr d: _____



Client Arcadis Site Name NSRR-ER Cooler unpacked by: [Signature]
 Cooler Received on 2-17-23 Opened on 2-17-23
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courtes Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
 If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA ← Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 01109014 Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____
 VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180588-1

Login Number: 180588

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C8PFOA	C8PFOS
		(26-159)	(41-154)
240-180588-6	WC-WS1-COMP (A1-A5)	80	88
240-180588-12	WC-WS1-COMP (A6-A10)	77	87
LCS 410-346502/2-B	Lab Control Sample	85	91
MB 410-346502/1-B	Method Blank	74	89

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/10/2023 9:30:14 AM Revision 1

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180588-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396

Generated
3/10/2023 9:30:14 AM
Revision 1



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	10
QC Association Summary	12
Lab Chronicle	13
Certification Summary	14
Chain of Custody	16
Receipt Checklists	19
Isotope Dilution Summary	20

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Job ID: 240-180588-2

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-180588-2**

Receipt

The samples were received on 2/17/2023 9:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.6°C and 5.5°C

Report revised on 3/10/2023 to report Total Dioxins calculations.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180588-6	WC-WS1-COMP (A1-A5)	Solid	02/17/23 00:00	02/17/23 21:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-2

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	220		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	180		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	27		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	78		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	44		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	42		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	66		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	28		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	51		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	33		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	33		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	52		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	57		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	5.0		1.1	0.23	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	23		1.1	0.23	ng/Kg	1	✳	8290A	Total/NA
OCDD	1100		11	2.3	ng/Kg	1	✳	8290A	Total/NA
OCDF	220		11	2.3	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	290		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	480		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	520		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	320		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	170	I	5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	450		5.7	2.3	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	81	I	1.1	0.23	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	490	I	1.1	0.23	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 86.8

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	220		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,4,6,7,8-HpCDF	180		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,4,7,8-HxCDD	27		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,4,7,8-HxCDF	78		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,4,7,8,9-HpCDF	44		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,6,7,8-HxCDD	42		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,6,7,8-HxCDF	66		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,7,8-PeCDD	28		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,7,8-PeCDF	51		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,7,8,9-HxCDD	33		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
1,2,3,7,8,9-HxCDF	33		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
2,3,4,6,7,8-HxCDF	52		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
2,3,4,7,8-PeCDF	57		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
2,3,7,8-TCDD	5.0		1.1	0.23	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
2,3,7,8-TCDF	23		1.1	0.23	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
OCDD	1100		11	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
OCDF	220		11	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total HxCDD	290		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total HxCDF	480		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total HpCDD	520		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total HpCDF	320		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total PeCDD	170	I	5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total PeCDF	450		5.7	2.3	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total TCDD	81	I	1.1	0.23	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1
Total TCDF	490	I	1.1	0.23	ng/Kg	✱	03/06/23 12:43	03/08/23 00:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	51		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-OCDD	51		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-2,3,7,8-TCDF	54		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-2,3,7,8-TCDD	56		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-2,3,4,7,8-PeCDF	54		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-2,3,4,6,7,8-HxCDF	48		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,7,8,9-HxCDF	51		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,7,8,9-HxCDD	53		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,7,8-PeCDF	58		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,7,8-PeCDD	55		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,6,7,8-HxCDF	60		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,6,7,8-HxCDD	57		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,4,7,8,9-HpCDF	55		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,4,7,8-HxCDF	60		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,4,7,8-HxCDD	56		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,4,6,7,8-HpCDF	60		40 - 135	03/06/23 12:43	03/08/23 00:18	1
13C-1,2,3,4,6,7,8-HpCDD	56		40 - 135	03/06/23 12:43	03/08/23 00:18	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-350542/1-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350542

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,6,7,8-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8,9-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDD	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDF	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	89		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-OCDD	88		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDD	68		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,6,7,8-HxCDF	81		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDD	83		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDD	69		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8,9-HpCDF	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDD	78		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-350542/2-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDD	100	93.6		ng/Kg		94	77 - 127
1,2,3,4,6,7,8-HpCDF	100	94.3		ng/Kg		94	77 - 127
1,2,3,4,7,8-HxCDD	100	98.7		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDF	100	97.8		ng/Kg		98	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.8		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	103		ng/Kg		103	76 - 127
1,2,3,6,7,8-HxCDF	100	97.3		ng/Kg		97	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	101		ng/Kg		101	75 - 129
1,2,3,7,8,9-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,7,8,9-HxCDF	100	97.4		ng/Kg		97	76 - 126
2,3,4,6,7,8-HxCDF	100	94.2		ng/Kg		94	78 - 128
2,3,4,7,8-PeCDF	100	104		ng/Kg		104	75 - 131
2,3,7,8-TCDD	20.0	19.9		ng/Kg		99	68 - 142
2,3,7,8-TCDF	20.0	17.7		ng/Kg		88	70 - 133
OCDD	200	202		ng/Kg		101	77 - 125
OCDF	200	199		ng/Kg		99	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	91		40 - 135
13C-OCDD	92		40 - 135
13C-2,3,7,8-TCDF	75		40 - 135
13C-2,3,7,8-TCDD	72		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-2,3,4,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDD	89		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	92		40 - 135
13C-1,2,3,4,7,8-HxCDF	83		40 - 135
13C-1,2,3,4,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	91		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	90		40 - 135

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Specialty Organics

Prep Batch: 350542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-350542/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 350921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-350542/1-A	Method Blank	Total/NA	Solid	8290A	350542
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	8290A	350542

Analysis Batch: 351132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180588-6	WC-WS1-COMP (A1-A5)	Total/NA	Solid	8290A	350542

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Client Sample ID: WC-WS1-COMP (A1-A5)

Lab Sample ID: 240-180588-6

Date Collected: 02/17/23 00:00

Matrix: Solid

Date Received: 02/17/23 21:00

Percent Solids: 86.8

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/08/23 00:18

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180588-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Chain of Custody Record

645235

Environment Testing America

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Project Manager: John Artrip Site Contact: Michelle Lybba Date: 2-17-23
 Tel/Email: Carolyn Brogan Lab Contact: Mike Delmonico Carrier: _____
 Analysis Turnaround Time: _____
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below RUSH
 2 weeks 1 week 2 days 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS/MSD (Y/N)		Total VOC	Total SVOC	TCLP Metals	TCLP VOC	TCLP SVOC	TCLP PEST	TCLP HERBS	TOTAL PHS	COC No.
						Y	N	Y	N									
WC-WS1-A1 (2-3)	2/17/23	1447	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A2 (2.5-3.5)	2/17/23	1457	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A3 (3-4)	2/17/23	1510	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A4 (5.6)	2/17/23	1527	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A5 (1-2)	2/17/23	1537	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-COMP(A1-A5)	2/17/23	-	LAB Comp	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A6 (3-4)	2/17/23	1617	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A7 (2-3)	2/17/23	1627	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A8 (4-5)	2/17/23	1637	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A9 (3-4)	2/17/23	1643	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-A10 (2-3)	2/17/23	1657	G	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE
WC-WS1-COMP(A6-A10)	2/17/23	-	LAB Comp	S	7	N	N	N	N	X	X	X	X	X	X	X	X	LAB TO GENERATE COMPOSITE

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other _____
 Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. U043 VINYL CHLORIDE
 Non-Hazard Flammable Skin Irritant Unknown

Special Instructions/QC Requirements & Comments:
LAB TO GERATE COMPOSITE SAMPLES CONTAINING 5 GRAB SAMPLES EACH
 Custody Seal No.: _____
 Company: Arcadis
 Date/Time: 2/17/23 1424
 Received by: [Signature]
 Company: EFINC
 Date/Time: 2-17-23 2100
 Received by: _____
 Company: _____
 Date/Time: _____
 Received in Laboratory by: _____
 Company: _____
 Date/Time: _____



Eurofins - Canton Sample Receipt Form/Narrative Login # : 180588
Barberton Facility

Client Arcadis Site Name NSRR-ER Cooler unpacked by: [Signature]
Cooler Received on 2-17-23 Opened on 2-17-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courtes Other _____
Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA  ← Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 01109014 Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180588-2

Login Number: 180588

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180588-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-180588-6	WC-WS1-COMP (A1-A5)	51	51	54	56	54	48	51	53
LCS 410-350542/2-A	Lab Control Sample	91	92	75	72	77	87	87	89
MB 410-350542/1-A	Method Blank	89	88	72	68	76	81	82	83

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-180588-6	WC-WS1-COMP (A1-A5)	58	55	60	57	55	60	56	60
LCS 410-350542/2-A	Lab Control Sample	76	70	87	84	92	83	84	91
MB 410-350542/1-A	Method Blank	72	69	84	80	86	79	78	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-180588-6	WC-WS1-COMP (A1-A5)	56
LCS 410-350542/2-A	Lab Control Sample	90
MB 410-350542/1-A	Method Blank	86

Surrogate Legend

OCDF = 13C-OCDF
 OCDD = 13C-OCDD
 TCDF = 13C-2,3,7,8-TCDF
 TCDD = 13C-2,3,7,8-TCDD
 PeCF = 13C-2,3,4,7,8-PeCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/25/2023 1:03:04 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180645-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/25/2023 1:03:04 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	11
Surrogate Summary	27
QC Sample Results	28
QC Association Summary	40
Lab Chronicle	43
Certification Summary	46
Chain of Custody	47

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Job ID: 240-180645-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180645-1

Comments

No additional comments.

Receipt

The samples were received on 2/18/2023 7:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.6° C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563103 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563303 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563308 was outside the method criteria for the following analytes: Bromomethane, Carbon disulfide and Chloroethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-562783 and analytical batch 240-563103 is not reported because it was analyzed in another batch.

Method 8260D: The MS/MSD for preparation batch 240-562783 and analytical batch 240-563308 is not reported because it was analyzed in another batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-WS2-11 (7-8') (240-180645-1), WC-WS2-12 (7-8') (240-180645-2), WC-WS2-13 (9-10') (240-180645-3), WC-WS2-14 (10-11') (240-180645-4), (240-180645-G-1-B MS) and (240-180645-G-1-C MSD). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563049 recovered above the upper control limit for 2-Nitrophenol and Atrazine. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-WS2-11 (7-8') (240-180645-1), WC-WS2-12 (7-8') (240-180645-2), WC-WS2-13 (9-10') (240-180645-3) and WC-WS2-14 (10-11') (240-180645-4).

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563049 recovered outside acceptance criteria, low biased, for bis (2-chloroisopropyl) ether and 4-Nitrophenol. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples: WC-WS2-11 (7-8') (240-180645-1), WC-WS2-12 (7-8') (240-180645-2), WC-WS2-13 (9-10') (240-180645-3) and WC-WS2-14 (10-11') (240-180645-4) were non-detect for the analytes, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Job ID: 240-180645-1 (Continued)

Laboratory: Eurofins Canton (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180645-1	WC-WS2-11 (7-8')	Solid	02/18/23 17:35	02/18/23 19:05
240-180645-2	WC-WS2-12 (7-8')	Solid	02/18/23 17:45	02/18/23 19:05
240-180645-3	WC-WS2-13 (9-10')	Solid	02/18/23 17:59	02/18/23 19:05
240-180645-4	WC-WS2-14 (10-11')	Solid	02/18/23 18:10	02/18/23 19:05

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.1	F1	0.92	0.12	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	0.53	J	0.92	0.21	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.62	J	0.92	0.40	mg/Kg	50	✳	8270E	Total/NA
Chrysene	0.67	J	0.92	0.091	mg/Kg	50	✳	8270E	Total/NA
Dibenzofuran	0.83	J	3.1	0.79	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	0.82	J	0.92	0.27	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	2.0		0.92	0.15	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	1.7		0.92	0.14	mg/Kg	50	✳	8270E	Total/NA
Pyrene	0.79	J	0.92	0.13	mg/Kg	50	✳	8270E	Total/NA
Barium	0.30	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00081	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0083	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.2		0.45	0.059	mg/Kg	25	✳	8270E	Total/NA
Acenaphthylene	0.15	J	0.45	0.12	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.14	J	0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.44	J	0.45	0.10	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.32	J	0.45	0.28	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.51		0.45	0.19	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.27	J	0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Chrysene	0.64		0.45	0.044	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	0.93	J	1.5	0.39	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	0.70		0.45	0.13	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.14	J	0.45	0.082	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	2.1		0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	1.8		0.45	0.067	mg/Kg	25	✳	8270E	Total/NA
Pyrene	0.73		0.45	0.064	mg/Kg	25	✳	8270E	Total/NA
Barium	0.82	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0010	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0070	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.1		0.45	0.059	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.22	J	0.45	0.086	mg/Kg	25	✳	8270E	Total/NA
Acenaphthylene	0.18	J	0.45	0.12	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.32	J	0.45	0.073	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.90		0.45	0.10	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.53		0.45	0.28	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.1		0.45	0.20	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.39	J	0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.36	J	0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Chrysene	1.2		0.45	0.045	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	0.92	J	1.5	0.39	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	1.9		0.45	0.13	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.19	J	0.45	0.082	mg/Kg	25	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.35	J	0.45	0.22	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	2.0		0.45	0.073	mg/Kg	25	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10') (Continued)

Lab Sample ID: 240-180645-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	1.9		0.45	0.067	mg/Kg	25	✳	8270E	Total/NA
Pyrene	1.5		0.45	0.064	mg/Kg	25	✳	8270E	Total/NA
Barium	0.31	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0080	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	1.1		0.48	0.062	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.20	J	0.48	0.11	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.25	J	0.48	0.21	mg/Kg	25	✳	8270E	Total/NA
Chrysene	0.29	J	0.48	0.047	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	0.34	J	0.48	0.14	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	0.68		0.48	0.076	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	0.58		0.48	0.071	mg/Kg	25	✳	8270E	Total/NA
Pyrene	0.34	J	0.48	0.068	mg/Kg	25	✳	8270E	Total/NA
Barium	0.33	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00097	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0078	J	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		27	8.3	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,1,2,2-Tetrachloroethane	ND		27	16	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		27	7.1	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,1,2-Trichloroethane	ND		27	6.1	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,1-Dichloroethane	ND		27	5.1	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,1-Dichloroethene	ND		27	8.7	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,2,4-Trichlorobenzene	ND		27	14	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,2-Dibromo-3-Chloropropane	ND		53	24	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Ethylene Dibromide	ND		27	8.4	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,2-Dichlorobenzene	ND		27	13	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,2-Dichloroethane	ND		27	5.0	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,2-Dichloropropane	ND		27	3.9	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,3-Dichlorobenzene	ND		27	4.9	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
1,4-Dichlorobenzene	ND		27	5.8	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
2-Butanone (MEK)	ND		110	17	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
2-Hexanone	ND		110	28	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
4-Methyl-2-pentanone (MIBK)	ND		110	25	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Acetone	ND		110	26	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Benzene	ND		27	4.5	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Dichlorobromomethane	ND		27	6.5	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Bromoform	ND		27	24	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Bromomethane	ND		27	18	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Carbon disulfide	ND		27	11	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Carbon tetrachloride	ND		27	11	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Chlorobenzene	ND		27	3.7	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Chloroethane	ND		27	16	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Chloroform	ND		27	5.7	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Chloromethane	ND		27	7.0	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
cis-1,2-Dichloroethene	ND		27	4.3	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
cis-1,3-Dichloropropene	ND		27	13	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Cyclohexane	ND		53	17	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Chlorodibromomethane	ND		27	12	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Dichlorodifluoromethane	ND		27	5.6	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Ethylbenzene	ND		27	5.0	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Isopropylbenzene	ND		27	4.0	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Methyl acetate	ND		130	18	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Methyl tert-butyl ether	ND		27	3.9	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Methylcyclohexane	ND		53	7.0	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Methylene Chloride	ND		53	41	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Styrene	ND		27	5.5	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Tetrachloroethene	ND		27	10	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Toluene	ND		27	26	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
trans-1,2-Dichloroethene	ND		27	6.6	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
trans-1,3-Dichloropropene	ND		27	11	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Trichloroethene	ND		27	15	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Trichlorofluoromethane	ND		27	15	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100
Vinyl chloride	ND		0.27	0.13	mg/Kg	✳	02/20/23 16:48	02/24/23 20:58	1
Xylenes, Total	ND		53	9.7	mg/Kg	✳	02/20/23 16:48	02/24/23 20:01	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/20/23 16:48	02/24/23 20:01	100
Toluene-d8 (Surr)	103		56 - 125	02/20/23 16:48	02/24/23 20:58	1
Dibromofluoromethane (Surr)	101		41 - 138	02/20/23 16:48	02/24/23 20:01	100
Dibromofluoromethane (Surr)	82		41 - 138	02/20/23 16:48	02/24/23 20:58	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 16:48	02/24/23 20:01	100
4-Bromofluorobenzene (Surr)	86		41 - 143	02/20/23 16:48	02/24/23 20:58	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 16:48	02/24/23 20:01	100
1,2-Dichloroethane-d4 (Surr)	76		58 - 125	02/20/23 16:48	02/24/23 20:58	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.1	1.0	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
bis (2-chloroisopropyl) ether	ND	F1	6.1	0.61	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4,5-Trichlorophenol	ND		9.2	4.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4,6-Trichlorophenol	ND		9.2	3.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4-Dichlorophenol	ND		9.2	2.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4-Dimethylphenol	ND		9.2	2.4	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4-Dinitrophenol	ND		20	8.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,4-Dinitrotoluene	ND		12	3.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Chloronaphthalene	ND		3.1	0.86	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Chlorophenol	ND	F1	3.1	0.61	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Methylnaphthalene	3.1	F1	0.92	0.12	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Methylphenol	ND		12	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Nitroaniline	ND		12	2.4	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
2-Nitrophenol	ND	F1	3.1	0.79	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
3,3'-Dichlorobenzidine	ND		6.1	2.6	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
3-Nitroaniline	ND		12	3.0	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4,6-Dinitro-2-methylphenol	ND		20	4.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Bromophenyl phenyl ether	ND		3.1	0.86	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Chloro-3-methylphenol	ND		9.2	2.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Chloroaniline	ND		9.2	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Chlorophenyl phenyl ether	ND		3.1	0.86	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Nitroaniline	ND		12	3.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
4-Nitrophenol	ND		20	5.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Acenaphthene	ND		0.92	0.17	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Acenaphthylene	ND		0.92	0.24	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Acetophenone	ND		6.1	0.67	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Anthracene	ND		0.92	0.15	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Atrazine	ND		12	2.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzaldehyde	ND	F1	6.1	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzo[a]anthracene	0.53	J	0.92	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzo[a]pyrene	ND		0.92	0.57	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzo[b]fluoranthene	0.62	J	0.92	0.40	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzo[g,h,i]perylene	ND		0.92	0.43	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Benzo[k]fluoranthene	ND		0.92	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Bis(2-chloroethoxy)methane	ND	F1	6.1	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Bis(2-chloroethyl)ether	ND	F1	6.1	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Bis(2-ethylhexyl) phthalate	ND		4.3	3.1	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Butyl benzyl phthalate	ND		4.3	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		20	4.6	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Carbazole	ND		3.1	1.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Chrysene	0.67	J	0.92	0.091	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Dibenz(a,h)anthracene	ND		0.92	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Dibenzofuran	0.83	J	3.1	0.79	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Diethyl phthalate	ND		4.3	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Dimethyl phthalate	ND		4.3	0.86	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Di-n-butyl phthalate	ND		4.3	3.1	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Di-n-octyl phthalate	ND		4.3	1.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Fluoranthene	0.82	J	0.92	0.27	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Fluorene	ND		0.92	0.17	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Hexachlorobenzene	ND		0.92	0.17	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Hexachlorobutadiene	ND	F1	3.1	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Hexachlorocyclopentadiene	ND		20	3.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Hexachloroethane	ND	F1	3.1	0.55	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Indeno[1,2,3-cd]pyrene	ND		0.92	0.45	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Isophorone	ND	F1	3.1	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
N-Nitrosodi-n-propylamine	ND	F1	3.1	0.67	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
N-Nitrosodiphenylamine	ND	F1	3.1	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Naphthalene	2.0		0.92	0.15	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Nitrobenzene	ND	F1	6.1	0.79	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Pentachlorophenol	ND		9.2	3.5	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Phenanthrene	1.7		0.92	0.14	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Phenol	ND	F1	3.1	0.49	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
Pyrene	0.79	J	0.92	0.13	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50
3 & 4 Methylphenol	ND		24	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:27	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	98		46 - 137	02/20/23 10:04	02/22/23 20:27	50
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 20:27	50
Nitrobenzene-d5 (Surr)	61		25 - 120	02/20/23 10:04	02/22/23 20:27	50
2-Fluorophenol (Surr)	70		20 - 120	02/20/23 10:04	02/22/23 20:27	50
2-Fluorobiphenyl (Surr)	88		34 - 120	02/20/23 10:04	02/22/23 20:27	50
2,4,6-Tribromophenol (Surr)	200	S1+	10 - 120	02/20/23 10:04	02/22/23 20:27	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:52	1
Barium	0.30	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:52	1
Cadmium	0.00081	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:52	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:52	1
Lead	0.0083	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:52	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:52	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:52	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:40	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.3		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	18.7		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		70	22	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,1,2,2-Tetrachloroethane	ND		70	42	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		70	19	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,1,2-Trichloroethane	ND		70	16	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,1-Dichloroethane	ND		70	14	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,1-Dichloroethene	ND		70	23	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,2,4-Trichlorobenzene	ND		70	37	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,2-Dibromo-3-Chloropropane	ND		140	62	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Ethylene Dibromide	ND		70	22	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,2-Dichlorobenzene	ND		70	34	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,2-Dichloroethane	ND		70	13	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,2-Dichloropropane	ND		70	10	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,3-Dichlorobenzene	ND		70	13	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
1,4-Dichlorobenzene	ND		70	15	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
2-Butanone (MEK)	ND		280	44	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
2-Hexanone	ND		280	74	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
4-Methyl-2-pentanone (MIBK)	ND		280	67	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Acetone	ND		280	69	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Benzene	ND		70	12	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Dichlorobromomethane	ND		70	17	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Bromoform	ND		70	64	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Bromomethane	ND		70	47	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Carbon disulfide	ND		70	30	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Carbon tetrachloride	ND		70	29	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Chlorobenzene	ND		70	9.9	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Chloroethane	ND		70	42	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Chloroform	ND		70	15	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Chloromethane	ND		70	19	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
cis-1,2-Dichloroethene	ND		70	11	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
cis-1,3-Dichloropropene	ND		70	35	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Cyclohexane	ND		140	46	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Chlorodibromomethane	ND		70	33	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Dichlorodifluoromethane	ND		70	15	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Ethylbenzene	ND		70	13	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Isopropylbenzene	ND		70	11	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Methyl acetate	ND		350	47	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Methyl tert-butyl ether	ND		70	10	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Methylcyclohexane	ND		140	19	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Methylene Chloride	ND		140	110	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Styrene	ND		70	15	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Tetrachloroethene	ND		70	27	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Toluene	ND		70	68	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
trans-1,2-Dichloroethene	ND		70	17	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
trans-1,3-Dichloropropene	ND		70	30	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Trichloroethene	ND		70	40	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Trichlorofluoromethane	ND		70	39	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250
Vinyl chloride	ND		0.28	0.14	mg/Kg	✱	02/20/23 16:48	02/24/23 21:22	1
Xylenes, Total	ND		140	26	mg/Kg	✱	02/20/23 16:48	02/23/23 17:18	250

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/20/23 16:48	02/23/23 17:18	250
Toluene-d8 (Surr)	103		56 - 125	02/20/23 16:48	02/24/23 21:22	1
Dibromofluoromethane (Surr)	79		41 - 138	02/20/23 16:48	02/23/23 17:18	250
Dibromofluoromethane (Surr)	81		41 - 138	02/20/23 16:48	02/24/23 21:22	1
4-Bromofluorobenzene (Surr)	73		41 - 143	02/20/23 16:48	02/23/23 17:18	250
4-Bromofluorobenzene (Surr)	82		41 - 143	02/20/23 16:48	02/24/23 21:22	1
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	02/20/23 16:48	02/23/23 17:18	250
1,2-Dichloroethane-d4 (Surr)	75		58 - 125	02/20/23 16:48	02/24/23 21:22	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4-Dinitrophenol	ND		9.9	4.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Methylnaphthalene	3.2		0.45	0.059	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Methylphenol	ND		6.0	0.93	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4,6-Dinitro-2-methylphenol	ND		9.9	2.4	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Chloroaniline	ND		4.5	0.90	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
4-Nitrophenol	ND		9.9	2.8	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Acenaphthene	ND		0.45	0.085	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Acenaphthylene	0.15	J	0.45	0.12	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Acetophenone	ND		3.0	0.33	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Anthracene	0.14	J	0.45	0.072	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzo[a]anthracene	0.44	J	0.45	0.10	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzo[a]pyrene	0.32	J	0.45	0.28	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzo[b]fluoranthene	0.51		0.45	0.19	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzo[g,h,i]perylene	0.27	J	0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Benzo[k]fluoranthene	ND		0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.9	2.2	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Carbazole	ND		1.5	0.57	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Chrysene	0.64		0.45	0.044	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Dibenzofuran	0.93	J	1.5	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Diethyl phthalate	ND		2.1	0.93	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Fluoranthene	0.70		0.45	0.13	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Fluorene	0.14	J	0.45	0.082	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Hexachlorocyclopentadiene	ND		9.9	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Hexachloroethane	ND		1.5	0.27	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Indeno[1,2,3-cd]pyrene	ND		0.45	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Isophorone	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Naphthalene	2.1		0.45	0.072	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Nitrobenzene	ND		3.0	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Pentachlorophenol	ND		4.5	1.7	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Phenanthrene	1.8		0.45	0.067	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Phenol	ND		1.5	0.24	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
Pyrene	0.73		0.45	0.064	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	☼	02/20/23 10:04	02/22/23 20:03	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	81		46 - 137	02/20/23 10:04	02/22/23 20:03	25
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 20:03	25
Nitrobenzene-d5 (Surr)	61		25 - 120	02/20/23 10:04	02/22/23 20:03	25
2-Fluorophenol (Surr)	57		20 - 120	02/20/23 10:04	02/22/23 20:03	25
2-Fluorobiphenyl (Surr)	74		34 - 120	02/20/23 10:04	02/22/23 20:03	25
2,4,6-Tribromophenol (Surr)	111		10 - 120	02/20/23 10:04	02/22/23 20:03	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 12:13	1
Barium	0.82	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 12:13	1
Cadmium	0.0010	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 12:13	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 12:13	1
Lead	0.0070	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 12:13	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 12:13	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 12:13	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:52	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.7		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	16.3		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		26	8.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,1,2,2-Tetrachloroethane	ND		26	15	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		26	6.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,1,2-Trichloroethane	ND		26	5.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,1-Dichloroethane	ND		26	4.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,1-Dichloroethene	ND		26	8.4	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,2,4-Trichlorobenzene	ND		26	14	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,2-Dibromo-3-Chloropropane	ND		51	23	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Ethylene Dibromide	ND		26	8.1	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,2-Dichlorobenzene	ND		26	12	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,2-Dichloroethane	ND		26	4.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,2-Dichloropropane	ND		26	3.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,3-Dichlorobenzene	ND		26	4.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
1,4-Dichlorobenzene	ND		26	5.6	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
2-Butanone (MEK)	ND		100	16	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
2-Hexanone	ND		100	27	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
4-Methyl-2-pentanone (MIBK)	ND		100	24	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Acetone	ND		100	25	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Benzene	ND		26	4.3	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Dichlorobromomethane	ND		26	6.2	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Bromoform	ND		26	23	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Bromomethane	ND		26	17	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Carbon disulfide	ND		26	11	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Carbon tetrachloride	ND		26	10	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Chlorobenzene	ND		26	3.6	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Chloroethane	ND		26	15	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Chloroform	ND		26	5.5	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Chloromethane	ND		26	6.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
cis-1,2-Dichloroethene	ND		26	4.1	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
cis-1,3-Dichloropropene	ND		26	13	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Cyclohexane	ND		51	17	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Chlorodibromomethane	ND		26	12	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Dichlorodifluoromethane	ND		26	5.4	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Ethylbenzene	ND		26	4.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Isopropylbenzene	ND		26	3.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Methyl acetate	ND		130	17	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Methyl tert-butyl ether	ND		26	3.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Methylcyclohexane	ND		51	6.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Methylene Chloride	ND		51	39	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Styrene	ND		26	5.3	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Tetrachloroethene	ND		26	9.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Toluene	ND		26	24	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
trans-1,2-Dichloroethene	ND		26	6.3	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
trans-1,3-Dichloropropene	ND		26	11	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Trichloroethene	ND		26	15	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Trichlorofluoromethane	ND		26	14	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100
Vinyl chloride	ND		0.26	0.13	mg/Kg	✱	02/20/23 16:48	02/24/23 21:46	1
Xylenes, Total	ND		51	9.3	mg/Kg	✱	02/20/23 16:48	02/24/23 20:26	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/20/23 16:48	02/24/23 20:26	100
Toluene-d8 (Surr)	103		56 - 125	02/20/23 16:48	02/24/23 21:46	1
Dibromofluoromethane (Surr)	104		41 - 138	02/20/23 16:48	02/24/23 20:26	100
Dibromofluoromethane (Surr)	83		41 - 138	02/20/23 16:48	02/24/23 21:46	1
4-Bromofluorobenzene (Surr)	108		41 - 143	02/20/23 16:48	02/24/23 20:26	100
4-Bromofluorobenzene (Surr)	86		41 - 143	02/20/23 16:48	02/24/23 21:46	1
1,2-Dichloroethane-d4 (Surr)	112		58 - 125	02/20/23 16:48	02/24/23 20:26	100
1,2-Dichloroethane-d4 (Surr)	72		58 - 125	02/20/23 16:48	02/24/23 21:46	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4-Dinitrophenol	ND		9.9	4.3	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Chlorophenol	ND		1.5	0.30	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Methylnaphthalene	3.1		0.45	0.059	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Methylphenol	ND		6.0	0.93	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Nitroaniline	ND		6.0	1.2	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
2-Nitrophenol	ND		1.5	0.39	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
3-Nitroaniline	ND		6.0	1.5	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4,6-Dinitro-2-methylphenol	ND		9.9	2.4	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Chloro-3-methylphenol	ND		4.5	1.4	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Chloroaniline	ND		4.5	0.90	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Nitroaniline	ND		6.0	1.8	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
4-Nitrophenol	ND		9.9	2.8	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Acenaphthene	0.22	J	0.45	0.086	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Acenaphthylene	0.18	J	0.45	0.12	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Acetophenone	ND		3.0	0.33	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Anthracene	0.32	J	0.45	0.073	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Atrazine	ND		6.0	1.1	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzaldehyde	ND		3.0	0.69	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzo[a]anthracene	0.90		0.45	0.10	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzo[a]pyrene	0.53		0.45	0.28	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzo[b]fluoranthene	1.1		0.45	0.20	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzo[g,h,i]perylene	0.39	J	0.45	0.21	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Benzo[k]fluoranthene	0.36	J	0.45	0.21	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	✱	02/20/23 10:04	02/22/23 19:15	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.9	2.3	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Carbazole	ND		1.5	0.57	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Chrysene	1.2		0.45	0.045	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Dibenzofuran	0.92	J	1.5	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Diethyl phthalate	ND		2.1	0.93	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Fluoranthene	1.9		0.45	0.13	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Fluorene	0.19	J	0.45	0.082	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Hexachlorobenzene	ND		0.45	0.086	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Hexachlorocyclopentadiene	ND		9.9	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Hexachloroethane	ND		1.5	0.27	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Indeno[1,2,3-cd]pyrene	0.35	J	0.45	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Isophorone	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Naphthalene	2.0		0.45	0.073	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Nitrobenzene	ND		3.0	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Pentachlorophenol	ND		4.5	1.7	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Phenanthrene	1.9		0.45	0.067	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Phenol	ND		1.5	0.24	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
Pyrene	1.5		0.45	0.064	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	☼	02/20/23 10:04	02/22/23 19:15	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	81		46 - 137	02/20/23 10:04	02/22/23 19:15	25
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 19:15	25
Nitrobenzene-d5 (Surr)	53		25 - 120	02/20/23 10:04	02/22/23 19:15	25
2-Fluorophenol (Surr)	69		20 - 120	02/20/23 10:04	02/22/23 19:15	25
2-Fluorobiphenyl (Surr)	77		34 - 120	02/20/23 10:04	02/22/23 19:15	25
2,4,6-Tribromophenol (Surr)	126	S1+	10 - 120	02/20/23 10:04	02/22/23 19:15	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 12:26	1
Barium	0.31	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 12:26	1
Cadmium	0.0012	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 12:26	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 12:26	1
Lead	0.0080	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 12:26	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 12:26	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 12:26	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:54	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.0		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	17.0		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		26	8.2	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,1,2,2-Tetrachloroethane	ND		26	16	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		26	7.1	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,1,2-Trichloroethane	ND		26	6.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,1-Dichloroethane	ND		26	5.1	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,1-Dichloroethene	ND		26	8.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,2,4-Trichlorobenzene	ND		26	14	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,2-Dibromo-3-Chloropropane	ND		53	23	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Ethylene Dibromide	ND		26	8.3	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,2-Dichlorobenzene	ND		26	13	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,2-Dichloroethane	ND		26	5.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,2-Dichloropropane	ND		26	3.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,3-Dichlorobenzene	ND		26	4.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
1,4-Dichlorobenzene	ND		26	5.8	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
2-Butanone (MEK)	ND		110	17	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
2-Hexanone	ND		110	28	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
4-Methyl-2-pentanone (MIBK)	ND		110	25	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Acetone	ND		110	26	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Benzene	ND		26	4.4	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Dichlorobromomethane	ND		26	6.4	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Bromoform	ND		26	24	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Bromomethane	ND		26	18	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Carbon disulfide	ND		26	11	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Carbon tetrachloride	ND		26	11	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Chlorobenzene	ND		26	3.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Chloroethane	ND		26	16	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Chloroform	ND		26	5.7	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Chloromethane	ND		26	7.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
cis-1,2-Dichloroethene	ND		26	4.2	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
cis-1,3-Dichloropropene	ND		26	13	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Cyclohexane	ND		53	17	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Chlorodibromomethane	ND		26	12	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Dichlorodifluoromethane	ND		26	5.6	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Ethylbenzene	ND		26	5.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Isopropylbenzene	ND		26	4.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Methyl acetate	ND		130	18	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Methyl tert-butyl ether	ND		26	3.9	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Methylcyclohexane	ND		53	7.0	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Methylene Chloride	ND		53	40	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Styrene	ND		26	5.5	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Tetrachloroethene	ND		26	10	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Toluene	ND		26	25	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
trans-1,2-Dichloroethene	ND		26	6.5	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
trans-1,3-Dichloropropene	ND		26	11	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Trichloroethene	ND		26	15	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Trichlorofluoromethane	ND		26	14	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100
Vinyl chloride	ND		0.26	0.13	mg/Kg	✱	02/20/23 16:48	02/24/23 22:10	1
Xylenes, Total	ND		53	9.6	mg/Kg	✱	02/20/23 16:48	02/24/23 20:51	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/20/23 16:48	02/24/23 20:51	100
Toluene-d8 (Surr)	105		56 - 125	02/20/23 16:48	02/24/23 22:10	1
Dibromofluoromethane (Surr)	103		41 - 138	02/20/23 16:48	02/24/23 20:51	100
Dibromofluoromethane (Surr)	82		41 - 138	02/20/23 16:48	02/24/23 22:10	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/20/23 16:48	02/24/23 20:51	100
4-Bromofluorobenzene (Surr)	86		41 - 143	02/20/23 16:48	02/24/23 22:10	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/20/23 16:48	02/24/23 20:51	100
1,2-Dichloroethane-d4 (Surr)	73		58 - 125	02/20/23 16:48	02/24/23 22:10	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.54	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
bis (2-chloroisopropyl) ether	ND		3.2	0.32	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4,5-Trichlorophenol	ND		4.8	2.2	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4,6-Trichlorophenol	ND		4.8	2.0	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4-Dichlorophenol	ND		4.8	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4-Dimethylphenol	ND		4.8	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4-Dinitrophenol	ND		10	4.5	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,4-Dinitrotoluene	ND		6.3	2.0	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2,6-Dinitrotoluene	ND		6.3	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Chlorophenol	ND		1.6	0.32	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Methylnaphthalene	1.1		0.48	0.062	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Methylphenol	ND		6.3	0.98	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Nitroaniline	ND		6.3	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
2-Nitrophenol	ND		1.6	0.41	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
3,3'-Dichlorobenzidine	ND		3.2	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
3-Nitroaniline	ND		6.3	1.6	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Chloro-3-methylphenol	ND		4.8	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Chloroaniline	ND		4.8	0.95	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Nitroaniline	ND		6.3	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
4-Nitrophenol	ND		10	3.0	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Acenaphthene	ND		0.48	0.091	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Acenaphthylene	ND		0.48	0.13	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Acetophenone	ND		3.2	0.35	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Anthracene	ND		0.48	0.076	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Atrazine	ND		6.3	1.1	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzaldehyde	ND		3.2	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzo[a]anthracene	0.20 J		0.48	0.11	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzo[a]pyrene	ND		0.48	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzo[b]fluoranthene	0.25 J		0.48	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzo[g,h,i]perylene	ND		0.48	0.23	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Benzo[k]fluoranthene	ND		0.48	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Bis(2-chloroethoxy)methane	ND		3.2	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Bis(2-chloroethyl)ether	ND		3.2	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Butyl benzyl phthalate	ND		2.2	0.70	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.4	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Carbazole	ND		1.6	0.60	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Chrysene	0.29	J	0.48	0.047	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Dibenz(a,h)anthracene	ND		0.48	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Dibenzofuran	ND		1.6	0.41	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Diethyl phthalate	ND		2.2	0.98	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Dimethyl phthalate	ND		2.2	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Di-n-octyl phthalate	ND		2.2	0.89	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Fluoranthene	0.34	J	0.48	0.14	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Fluorene	ND		0.48	0.087	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Hexachlorobenzene	ND		0.48	0.090	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Hexachlorobutadiene	ND		1.6	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Hexachlorocyclopentadiene	ND		10	2.0	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Hexachloroethane	ND		1.6	0.29	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Indeno[1,2,3-cd]pyrene	ND		0.48	0.23	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Isophorone	ND		1.6	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
N-Nitrosodi-n-propylamine	ND		1.6	0.35	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
N-Nitrosodiphenylamine	ND		1.6	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Naphthalene	0.68		0.48	0.076	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Nitrobenzene	ND		3.2	0.41	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Pentachlorophenol	ND		4.8	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Phenanthrene	0.58		0.48	0.071	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Phenol	ND		1.6	0.25	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
Pyrene	0.34	J	0.48	0.068	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25
3 & 4 Methylphenol	ND		13	0.92	mg/Kg	☼	02/20/23 10:04	02/22/23 19:39	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	32	S1-	46 - 137	02/20/23 10:04	02/22/23 19:39	25
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 19:39	25
Nitrobenzene-d5 (Surr)	23	S1-	25 - 120	02/20/23 10:04	02/22/23 19:39	25
2-Fluorophenol (Surr)	22		20 - 120	02/20/23 10:04	02/22/23 19:39	25
2-Fluorobiphenyl (Surr)	28	S1-	34 - 120	02/20/23 10:04	02/22/23 19:39	25
2,4,6-Tribromophenol (Surr)	102		10 - 120	02/20/23 10:04	02/22/23 19:39	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 12:30	1
Barium	0.33	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 12:30	1
Cadmium	0.00097	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 12:30	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 12:30	1
Lead	0.0078	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 12:30	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 12:30	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 12:30	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:56	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.2		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	20.8		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180645-1	WC-WS2-11 (7-8')	105	101	106	109
240-180645-1	WC-WS2-11 (7-8')	103	82	86	76
240-180645-2	WC-WS2-12 (7-8')	78	79	73	80
240-180645-2	WC-WS2-12 (7-8')	103	81	82	75
240-180645-3	WC-WS2-13 (9-10')	108	104	108	112
240-180645-3	WC-WS2-13 (9-10')	103	83	86	72
240-180645-4	WC-WS2-14 (10-11')	107	103	106	109
240-180645-4	WC-WS2-14 (10-11')	105	82	86	73
LCS 240-562783/2-A	Lab Control Sample	108	104	106	104
LCS 240-562783/2-A	Lab Control Sample	91	83	101	77
MB 240-562783/1-A	Method Blank	105	93	104	107
MB 240-562783/1-A	Method Blank	94	83	102	74

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180645-1	WC-WS2-11 (7-8')	98	0 S1-	61	70	88	200 S1+
240-180645-1 MS	WC-WS2-11 (7-8')	82	0 S1-	53	58	63	168 S1+
240-180645-1 MSD	WC-WS2-11 (7-8')	92	0 S1-	51	74	73	198 S1+
240-180645-2	WC-WS2-12 (7-8')	81	0 S1-	61	57	74	111
240-180645-3	WC-WS2-13 (9-10')	81	0 S1-	53	69	77	126 S1+
240-180645-4	WC-WS2-14 (10-11')	32 S1-	0 S1-	23 S1-	22	28 S1-	102
LCS 240-562719/25-A	Lab Control Sample	128	59	57	54	85	41
LCS 240-562719/26-A	Lab Control Sample	132	64	61	56	88	43
LCS 240-562719/2-A	Lab Control Sample	110	74	62	75	92	107
MB 240-562719/1-A	Method Blank	112	56	56	51	81	45

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-562783/1-A
Matrix: Solid
Analysis Batch: 563092

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562783

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Acetone	ND		1.0	0.24	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Benzene	ND		0.25	0.042	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Bromoform	ND		0.25	0.23	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Chloroform	ND		0.25	0.054	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Styrene	ND		0.25	0.052	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Toluene	ND		0.25	0.24	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/23/23 08:26	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/20/23 16:48	02/23/23 08:26	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562783/1-A

Matrix: Solid

Analysis Batch: 563092

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562783

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		56 - 125	02/20/23 16:48	02/23/23 08:26	1
Dibromofluoromethane (Surr)	93		41 - 138	02/20/23 16:48	02/23/23 08:26	1
4-Bromofluorobenzene (Surr)	104		41 - 143	02/20/23 16:48	02/23/23 08:26	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125	02/20/23 16:48	02/23/23 08:26	1

Lab Sample ID: MB 240-562783/1-A

Matrix: Solid

Analysis Batch: 563382

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562783

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/24/23 20:10	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	94		56 - 125	02/20/23 16:48	02/24/23 20:10	1
Dibromofluoromethane (Surr)	83		41 - 138	02/20/23 16:48	02/24/23 20:10	1
4-Bromofluorobenzene (Surr)	102		41 - 143	02/20/23 16:48	02/24/23 20:10	1
1,2-Dichloroethane-d4 (Surr)	74		58 - 125	02/20/23 16:48	02/24/23 20:10	1

Lab Sample ID: LCS 240-562783/2-A

Matrix: Solid

Analysis Batch: 563092

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562783

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	1.25	1.22		mg/Kg		98	74 - 136
1,1,1,2-Tetrachloroethane	1.25	1.12		mg/Kg		89	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.23		mg/Kg		98	64 - 148
1,1,2-Trichloroethane	1.25	1.24		mg/Kg		99	79 - 120
1,1-Dichloroethane	1.25	1.19		mg/Kg		95	74 - 121
1,1-Dichloroethene	1.25	1.10		mg/Kg		88	68 - 141
1,2,4-Trichlorobenzene	1.25	1.08		mg/Kg		86	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.882		mg/Kg		71	52 - 133
Ethylene Dibromide	1.25	1.18		mg/Kg		95	80 - 121
1,2-Dichlorobenzene	1.25	1.24		mg/Kg		99	73 - 120
1,2-Dichloroethane	1.25	1.21		mg/Kg		97	71 - 123
1,2-Dichloropropane	1.25	1.16		mg/Kg		92	76 - 126
1,3-Dichlorobenzene	1.25	1.18		mg/Kg		95	73 - 120
1,4-Dichlorobenzene	1.25	1.20		mg/Kg		96	74 - 120
2-Butanone (MEK)	2.50	2.43		mg/Kg		97	63 - 142
2-Hexanone	2.50	2.42		mg/Kg		97	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.35		mg/Kg		94	62 - 142
Acetone	2.50	2.71		mg/Kg		108	58 - 160
Benzene	1.25	1.25		mg/Kg		100	76 - 121
Dichlorobromomethane	1.25	1.05		mg/Kg		84	71 - 138
Bromoform	1.25	0.879		mg/Kg		70	57 - 140
Bromomethane	1.25	0.720		mg/Kg		58	10 - 171
Carbon disulfide	1.25	0.801		mg/Kg		64	43 - 152
Carbon tetrachloride	1.25	0.974		mg/Kg		78	64 - 144

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562783/2-A

Matrix: Solid

Analysis Batch: 563092

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562783

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene	1.25	1.24		mg/Kg		99	80 - 120
Chloroethane	1.25	0.620		mg/Kg		50	11 - 164
Chloroform	1.25	1.21		mg/Kg		97	78 - 120
Chloromethane	1.25	1.40		mg/Kg		112	41 - 142
cis-1,2-Dichloroethene	1.25	1.23		mg/Kg		99	78 - 124
cis-1,3-Dichloropropene	1.25	1.09		mg/Kg		87	70 - 133
Cyclohexane	1.25	1.21		mg/Kg		97	65 - 137
Chlorodibromomethane	1.25	0.983		mg/Kg		79	68 - 131
Dichlorodifluoromethane	1.25	1.54		mg/Kg		123	21 - 150
Ethylbenzene	1.25	1.26		mg/Kg		101	80 - 120
Isopropylbenzene	1.25	1.28		mg/Kg		102	80 - 130
Methyl acetate	2.50	2.43		mg/Kg		97	60 - 133
Methyl tert-butyl ether	1.25	1.20		mg/Kg		96	70 - 130
Methylcyclohexane	1.25	1.22		mg/Kg		98	70 - 138
Methylene Chloride	1.25	1.32		mg/Kg		106	71 - 124
Styrene	1.25	1.28		mg/Kg		103	75 - 140
Tetrachloroethene	1.25	1.32		mg/Kg		105	76 - 127
Toluene	1.25	1.23		mg/Kg		99	80 - 120
trans-1,2-Dichloroethene	1.25	1.15		mg/Kg		92	76 - 130
trans-1,3-Dichloropropene	1.25	1.10		mg/Kg		88	61 - 121
Trichloroethene	1.25	1.24		mg/Kg		99	74 - 130
Trichlorofluoromethane	1.25	1.02		mg/Kg		82	50 - 154
Vinyl chloride	1.25	1.37		mg/Kg		110	49 - 146
Xylenes, Total	2.50	2.49		mg/Kg		100	80 - 122
m-Xylene & p-Xylene	1.25	1.25		mg/Kg		100	80 - 122
o-Xylene	1.25	1.24		mg/Kg		99	80 - 124

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	108		56 - 125
Dibromofluoromethane (Surr)	104		41 - 138
4-Bromofluorobenzene (Surr)	106		41 - 143
1,2-Dichloroethane-d4 (Surr)	104		58 - 125

Lab Sample ID: LCS 240-562783/2-A

Matrix: Solid

Analysis Batch: 563382

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562783

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.25	1.20		mg/Kg		96	49 - 146

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	91		56 - 125
Dibromofluoromethane (Surr)	83		41 - 138
4-Bromofluorobenzene (Surr)	101		41 - 143
1,2-Dichloroethane-d4 (Surr)	77		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-562719/1-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562719

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Atrazine	ND		0.20	0.036	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Carbazole	ND		0.050	0.019	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/20/23 10:04	02/22/23 15:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562719/1-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562719

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Isophorone	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Phenol	ND		0.050	0.0080	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	112		46 - 137	02/20/23 10:04	02/22/23 15:15	1
Phenol-d5 (Surr)	56		26 - 120	02/20/23 10:04	02/22/23 15:15	1
Nitrobenzene-d5 (Surr)	56		25 - 120	02/20/23 10:04	02/22/23 15:15	1
2-Fluorophenol (Surr)	51		20 - 120	02/20/23 10:04	02/22/23 15:15	1
2-Fluorobiphenyl (Surr)	81		34 - 120	02/20/23 10:04	02/22/23 15:15	1
2,4,6-Tribromophenol (Surr)	45		10 - 120	02/20/23 10:04	02/22/23 15:15	1

Lab Sample ID: LCS 240-562719/25-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	128		46 - 137
Phenol-d5 (Surr)	59		26 - 120
Nitrobenzene-d5 (Surr)	57		25 - 120
2-Fluorophenol (Surr)	54		20 - 120
2-Fluorobiphenyl (Surr)	85		34 - 120
2,4,6-Tribromophenol (Surr)	41		10 - 120

Lab Sample ID: LCS 240-562719/26-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	132		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	61		25 - 120
2-Fluorophenol (Surr)	56		20 - 120
2-Fluorobiphenyl (Surr)	88		34 - 120

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562719/26-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	43		10 - 120

Lab Sample ID: LCS 240-562719/2-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.567		mg/Kg		85	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.361		mg/Kg		54	38 - 120
2,4,5-Trichlorophenol	0.667	0.649		mg/Kg		97	50 - 120
2,4,6-Trichlorophenol	0.667	0.650		mg/Kg		97	50 - 120
2,4-Dichlorophenol	0.667	0.629		mg/Kg		94	50 - 120
2,4-Dimethylphenol	0.667	0.450		mg/Kg		67	24 - 120
2,4-Dinitrophenol	1.33	0.881		mg/Kg		66	19 - 132
2,4-Dinitrotoluene	0.667	0.590		mg/Kg		89	64 - 120
2,6-Dinitrotoluene	0.667	0.656		mg/Kg		98	62 - 120
2-Chloronaphthalene	0.667	0.552		mg/Kg		83	51 - 120
2-Chlorophenol	0.667	0.523		mg/Kg		78	47 - 120
2-Methylnaphthalene	0.667	0.487		mg/Kg		73	38 - 120
2-Methylphenol	0.667	0.454		mg/Kg		68	45 - 120
2-Nitroaniline	0.667	0.458		mg/Kg		69	57 - 120
2-Nitrophenol	0.667	0.627		mg/Kg		94	51 - 120
3,3'-Dichlorobenzidine	1.33	1.07		mg/Kg		80	27 - 199
3-Nitroaniline	0.667	0.490		mg/Kg		74	41 - 120
4,6-Dinitro-2-methylphenol	1.33	0.954		mg/Kg		72	46 - 126
4-Bromophenyl phenyl ether	0.667	0.683		mg/Kg		102	65 - 120
4-Chloro-3-methylphenol	0.667	0.512		mg/Kg		77	51 - 120
4-Chloroaniline	0.667	0.383		mg/Kg		57	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.592		mg/Kg		89	59 - 120
4-Nitroaniline	0.667	0.598		mg/Kg		90	48 - 128
4-Nitrophenol	1.33	0.927		mg/Kg		70	43 - 120
Acenaphthene	0.667	0.582		mg/Kg		87	52 - 120
Acenaphthylene	0.667	0.621		mg/Kg		93	52 - 120
Acetophenone	0.667	0.449		mg/Kg		67	47 - 120
Anthracene	0.667	0.616		mg/Kg		92	64 - 120
Atrazine	1.33	1.50		mg/Kg		113	71 - 125
Benzaldehyde	1.33	0.820		mg/Kg		61	42 - 120
Benzo[a]anthracene	0.667	0.683		mg/Kg		102	70 - 120
Benzo[a]pyrene	0.667	0.615		mg/Kg		92	63 - 125
Benzo[b]fluoranthene	0.667	0.609		mg/Kg		91	64 - 121
Benzo[g,h,i]perylene	0.667	0.637		mg/Kg		96	62 - 120
Benzo[k]fluoranthene	0.667	0.607		mg/Kg		91	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.460		mg/Kg		69	50 - 120
Bis(2-chloroethyl)ether	0.667	0.388		mg/Kg		58	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.611		mg/Kg		92	63 - 133
Butyl benzyl phthalate	0.667	0.592		mg/Kg		89	66 - 127
Caprolactam	1.33	1.11		mg/Kg		83	67 - 120
Carbazole	0.667	0.619		mg/Kg		93	61 - 129

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562719/2-A

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chrysene	0.667	0.643		mg/Kg		96	67 - 120
Dibenz(a,h)anthracene	0.667	0.641		mg/Kg		96	62 - 120
Dibenzofuran	0.667	0.561		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.566		mg/Kg		85	61 - 120
Dimethyl phthalate	0.667	0.566		mg/Kg		85	64 - 120
Di-n-butyl phthalate	0.667	0.652		mg/Kg		98	70 - 129
Di-n-octyl phthalate	0.667	0.510		mg/Kg		76	64 - 129
Fluoranthene	0.667	0.600		mg/Kg		90	71 - 124
Fluorene	0.667	0.587		mg/Kg		88	58 - 120
Hexachlorobenzene	0.667	0.609		mg/Kg		91	59 - 120
Hexachlorobutadiene	0.667	0.521		mg/Kg		78	45 - 120
Hexachlorocyclopentadiene	0.667	0.363		mg/Kg		55	10 - 120
Hexachloroethane	0.667	0.406		mg/Kg		61	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.664		mg/Kg		100	65 - 122
Isophorone	0.667	0.459		mg/Kg		69	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.420		mg/Kg		63	48 - 120
N-Nitrosodiphenylamine	0.667	0.554		mg/Kg		83	64 - 120
Naphthalene	0.667	0.502		mg/Kg		75	34 - 120
Nitrobenzene	0.667	0.416		mg/Kg		62	48 - 120
Pentachlorophenol	1.33	0.681		mg/Kg		51	10 - 120
Phenanthrene	0.667	0.586		mg/Kg		88	60 - 120
Phenol	0.667	0.437		mg/Kg		66	48 - 120
Pyrene	0.667	0.670		mg/Kg		101	67 - 120
3 & 4 Methylphenol	0.667	0.476		mg/Kg		71	49 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	110		46 - 137
Phenol-d5 (Surr)	74		26 - 120
Nitrobenzene-d5 (Surr)	62		25 - 120
2-Fluorophenol (Surr)	75		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	107		10 - 120

Lab Sample ID: 240-180645-1 MS

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: WC-WS2-11 (7-8')

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	ND		0.824	ND		mg/Kg	☼	NC	29 - 120
bis (2-chloroisopropyl) ether	ND	F1	0.824	ND	F1	mg/Kg	☼	0	10 - 120
2,4,5-Trichlorophenol	ND		0.824	ND		mg/Kg	☼	NC	35 - 120
2,4,6-Trichlorophenol	ND		0.824	ND		mg/Kg	☼	NC	18 - 120
2,4-Dichlorophenol	ND		0.824	ND		mg/Kg	☼	NC	21 - 120
2,4-Dimethylphenol	ND		0.824	ND		mg/Kg	☼	NC	10 - 120
2,4-Dinitrophenol	ND		1.65	ND		mg/Kg	☼	NC	10 - 126
2,4-Dinitrotoluene	ND		0.824	ND		mg/Kg	☼	NC	46 - 120
2,6-Dinitrotoluene	ND		0.824	ND		mg/Kg	☼	NC	44 - 120
2-Chloronaphthalene	ND		0.824	ND		mg/Kg	☼	NC	33 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180645-1 MS

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: WC-WS2-11 (7-8')

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Added	Result				
2-Chlorophenol	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	19 - 120
2-Methylnaphthalene	3.1	F1	0.824	3.96		mg/Kg	⊛	99	13 - 122
2-Methylphenol	ND		0.824	ND		mg/Kg	⊛	NC	12 - 120
2-Nitroaniline	ND		0.824	ND		mg/Kg	⊛	NC	36 - 122
2-Nitrophenol	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	28 - 120
3,3'-Dichlorobenzidine	ND		1.65	ND		mg/Kg	⊛	NC	10 - 179
3-Nitroaniline	ND		0.824	ND		mg/Kg	⊛	NC	10 - 123
4,6-Dinitro-2-methylphenol	ND		1.65	ND		mg/Kg	⊛	NC	11 - 120
4-Bromophenyl phenyl ether	ND		0.824	ND		mg/Kg	⊛	NC	49 - 120
4-Chloro-3-methylphenol	ND		0.824	ND		mg/Kg	⊛	NC	35 - 120
4-Chloroaniline	ND		0.824	ND		mg/Kg	⊛	NC	10 - 120
4-Chlorophenyl phenyl ether	ND		0.824	ND		mg/Kg	⊛	NC	45 - 120
4-Nitroaniline	ND		0.824	ND		mg/Kg	⊛	NC	13 - 129
4-Nitrophenol	ND		1.65	ND		mg/Kg	⊛	NC	28 - 123
Acenaphthene	ND		0.824	0.565	J	mg/Kg	⊛	69	33 - 120
Acenaphthylene	ND		0.824	0.651	J	mg/Kg	⊛	79	39 - 120
Acetophenone	ND		0.824	0.881	J	mg/Kg	⊛	107	11 - 120
Anthracene	ND		0.824	0.612	J	mg/Kg	⊛	74	30 - 127
Atrazine	ND		1.65	ND		mg/Kg	⊛	NC	52 - 126
Benzaldehyde	ND	F1	1.65	2.58	J F1	mg/Kg	⊛	157	13 - 120
Benzo[a]anthracene	0.53	J	0.824	1.07		mg/Kg	⊛	66	24 - 137
Benzo[a]pyrene	ND		0.824	0.815	J	mg/Kg	⊛	99	28 - 136
Benzo[b]fluoranthene	0.62	J	0.824	1.05		mg/Kg	⊛	51	21 - 142
Benzo[g,h,i]perylene	ND		0.824	0.760	J	mg/Kg	⊛	92	10 - 144
Benzo[k]fluoranthene	ND		0.824	0.656	J	mg/Kg	⊛	80	36 - 135
Bis(2-chloroethoxy)methane	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	25 - 120
Bis(2-chloroethyl)ether	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.824	ND		mg/Kg	⊛	NC	37 - 143
Butyl benzyl phthalate	ND		0.824	1.71	J	mg/Kg	⊛	NC	49 - 130
Caprolactam	ND		1.65	ND		mg/Kg	⊛	NC	37 - 127
Carbazole	ND		0.824	ND		mg/Kg	⊛	NC	33 - 132
Chrysene	0.67	J	0.824	1.21		mg/Kg	⊛	66	28 - 129
Dibenz(a,h)anthracene	ND		0.824	0.500	J	mg/Kg	⊛	61	10 - 132
Dibenzofuran	0.83	J	0.824	1.41	J	mg/Kg	⊛	70	33 - 120
Diethyl phthalate	ND		0.824	ND		mg/Kg	⊛	NC	48 - 120
Dimethyl phthalate	ND		0.824	ND		mg/Kg	⊛	NC	45 - 120
Di-n-butyl phthalate	ND		0.824	ND		mg/Kg	⊛	NC	40 - 137
Di-n-octyl phthalate	ND		0.824	3.25	J	mg/Kg	⊛	NC	34 - 152
Fluoranthene	0.82	J	0.824	1.29		mg/Kg	⊛	57	31 - 140
Fluorene	ND		0.824	0.619	J	mg/Kg	⊛	75	43 - 120
Hexachlorobenzene	ND		0.824	0.474	J	mg/Kg	⊛	57	44 - 120
Hexachlorobutadiene	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	13 - 120
Hexachlorocyclopentadiene	ND		0.824	ND		mg/Kg	⊛	NC	10 - 120
Hexachloroethane	ND	F1	0.824	0.565	J	mg/Kg	⊛	69	10 - 120
Indeno[1,2,3-cd]pyrene	ND		0.824	0.648	J	mg/Kg	⊛	79	10 - 139
Isophorone	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	27 - 120
N-Nitrosodi-n-propylamine	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	23 - 120
N-Nitrosodiphenylamine	ND	F1	0.824	ND	F1	mg/Kg	⊛	0	30 - 128
Naphthalene	2.0		0.824	2.74		mg/Kg	⊛	91	10 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180645-1 MS

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: WC-WS2-11 (7-8')

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier					
Nitrobenzene	ND	F1	0.824	ND	F1	mg/Kg	☼	0		19 - 120
Pentachlorophenol	ND		1.65	5.58	J	mg/Kg	☼	NC		10 - 120
Phenanthrene	1.7		0.824	2.30		mg/Kg	☼	78		36 - 120
Phenol	ND	F1	0.824	ND	F1	mg/Kg	☼	0		10 - 120
Pyrene	0.79	J	0.824	1.32		mg/Kg	☼	64		31 - 134
3 & 4 Methylphenol	ND		0.824	ND		mg/Kg	☼	NC		10 - 122
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
Terphenyl-d14 (Surr)	82		46 - 137							
Phenol-d5 (Surr)	0	S1-	26 - 120							
Nitrobenzene-d5 (Surr)	53		25 - 120							
2-Fluorophenol (Surr)	58		20 - 120							
2-Fluorobiphenyl (Surr)	63		34 - 120							
2,4,6-Tribromophenol (Surr)	168	S1+	10 - 120							

Lab Sample ID: 240-180645-1 MSD

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: WC-WS2-11 (7-8')

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
1,1'-Biphenyl	ND		0.818	ND		mg/Kg	☼	NC		29 - 120	NC	45
bis (2-chloroisopropyl) ether	ND	F1	0.818	1.05	J F1	mg/Kg	☼	128		10 - 120	NC	45
2,4,5-Trichlorophenol	ND		0.818	ND		mg/Kg	☼	NC		35 - 120	NC	39
2,4,6-Trichlorophenol	ND		0.818	ND		mg/Kg	☼	NC		18 - 120	NC	45
2,4-Dichlorophenol	ND		0.818	ND		mg/Kg	☼	NC		21 - 120	NC	44
2,4-Dimethylphenol	ND		0.818	ND		mg/Kg	☼	NC		10 - 120	NC	45
2,4-Dinitrophenol	ND		1.64	ND		mg/Kg	☼	NC		10 - 126	NC	45
2,4-Dinitrotoluene	ND		0.818	ND		mg/Kg	☼	NC		46 - 120	NC	45
2,6-Dinitrotoluene	ND		0.818	ND		mg/Kg	☼	NC		44 - 120	NC	45
2-Chloronaphthalene	ND		0.818	ND		mg/Kg	☼	NC		33 - 120	NC	45
2-Chlorophenol	ND	F1	0.818	ND	F1	mg/Kg	☼	0		19 - 120	NC	45
2-Methylnaphthalene	3.1	F1	0.818	4.28	F1	mg/Kg	☼	139		13 - 122	8	45
2-Methylphenol	ND		0.818	ND		mg/Kg	☼	NC		12 - 120	NC	45
2-Nitroaniline	ND		0.818	ND		mg/Kg	☼	NC		36 - 122	NC	42
2-Nitrophenol	ND	F1	0.818	ND	F1	mg/Kg	☼	0		28 - 120	NC	45
3,3'-Dichlorobenzidine	ND		1.64	ND		mg/Kg	☼	NC		10 - 179	NC	45
3-Nitroaniline	ND		0.818	ND		mg/Kg	☼	NC		10 - 123	NC	45
4,6-Dinitro-2-methylphenol	ND		1.64	7.06	J	mg/Kg	☼	NC		11 - 120	NC	40
4-Bromophenyl phenyl ether	ND		0.818	ND		mg/Kg	☼	NC		49 - 120	NC	42
4-Chloro-3-methylphenol	ND		0.818	ND		mg/Kg	☼	NC		35 - 120	NC	42
4-Chloroaniline	ND		0.818	ND		mg/Kg	☼	NC		10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND		0.818	ND		mg/Kg	☼	NC		45 - 120	NC	44
4-Nitroaniline	ND		0.818	ND		mg/Kg	☼	NC		13 - 129	NC	38
4-Nitrophenol	ND		1.64	ND		mg/Kg	☼	NC		28 - 123	NC	45
Acenaphthene	ND		0.818	0.735	J	mg/Kg	☼	90		33 - 120	26	45
Acenaphthylene	ND		0.818	0.796	J	mg/Kg	☼	97		39 - 120	20	45
Acetophenone	ND		0.818	0.774	J	mg/Kg	☼	95		11 - 120	13	45
Anthracene	ND		0.818	0.822	J	mg/Kg	☼	100		30 - 127	29	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180645-1 MSD

Matrix: Solid

Analysis Batch: 563049

Client Sample ID: WC-WS2-11 (7-8')

Prep Type: Total/NA

Prep Batch: 562719

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
Atrazine	ND		1.64	ND		mg/Kg	*	NC	52 - 126	NC	34
Benzaldehyde	ND	F1	1.64	1.82	J	mg/Kg	*	111	13 - 120	35	45
Benzo[a]anthracene	0.53	J	0.818	1.26		mg/Kg	*	89	24 - 137	16	42
Benzo[a]pyrene	ND		0.818	0.964		mg/Kg	*	118	28 - 136	17	41
Benzo[b]fluoranthene	0.62	J	0.818	1.29		mg/Kg	*	81	21 - 142	21	42
Benzo[g,h,i]perylene	ND		0.818	0.712	J	mg/Kg	*	87	10 - 144	6	40
Benzo[k]fluoranthene	ND		0.818	0.791	J	mg/Kg	*	97	36 - 135	19	44
Bis(2-chloroethoxy)methane	ND	F1	0.818	ND	F1	mg/Kg	*	0	25 - 120	NC	45
Bis(2-chloroethyl)ether	ND	F1	0.818	ND	F1	mg/Kg	*	0	16 - 120	NC	45
Bis(2-ethylhexyl) phthalate	ND		0.818	ND		mg/Kg	*	NC	37 - 143	NC	38
Butyl benzyl phthalate	ND		0.818	1.85	J	mg/Kg	*	NC	49 - 130	7	41
Caprolactam	ND		1.64	ND		mg/Kg	*	NC	37 - 127	NC	45
Carbazole	ND		0.818	ND		mg/Kg	*	NC	33 - 132	NC	45
Chrysene	0.67	J	0.818	1.42		mg/Kg	*	93	28 - 129	16	42
Dibenz(a,h)anthracene	ND		0.818	0.538	J	mg/Kg	*	66	10 - 132	7	37
Dibenzofuran	0.83	J	0.818	1.64	J	mg/Kg	*	98	33 - 120	15	43
Diethyl phthalate	ND		0.818	ND		mg/Kg	*	NC	48 - 120	NC	38
Dimethyl phthalate	ND		0.818	ND		mg/Kg	*	NC	45 - 120	NC	43
Di-n-butyl phthalate	ND		0.818	ND		mg/Kg	*	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND		0.818	3.32	J	mg/Kg	*	NC	34 - 152	2	39
Fluoranthene	0.82	J	0.818	1.48		mg/Kg	*	80	31 - 140	13	45
Fluorene	ND		0.818	0.697	J	mg/Kg	*	85	43 - 120	12	39
Hexachlorobenzene	ND		0.818	0.651	J	mg/Kg	*	79	44 - 120	31	39
Hexachlorobutadiene	ND	F1	0.818	ND	F1	mg/Kg	*	0	13 - 120	NC	45
Hexachlorocyclopentadiene	ND		0.818	ND		mg/Kg	*	NC	10 - 120	NC	45
Hexachloroethane	ND	F1	0.818	ND	F1	mg/Kg	*	0	10 - 120	NC	45
Indeno[1,2,3-cd]pyrene	ND		0.818	0.688	J	mg/Kg	*	84	10 - 139	6	41
Isophorone	ND	F1	0.818	ND	F1	mg/Kg	*	0	27 - 120	NC	45
N-Nitrosodi-n-propylamine	ND	F1	0.818	ND	F1	mg/Kg	*	0	23 - 120	NC	45
N-Nitrosodiphenylamine	ND	F1	0.818	0.909	J	mg/Kg	*	111	30 - 128	NC	44
Naphthalene	2.0		0.818	2.72		mg/Kg	*	88	10 - 120	1	45
Nitrobenzene	ND	F1	0.818	ND	F1	mg/Kg	*	0	19 - 120	NC	45
Pentachlorophenol	ND		1.64	5.58	J	mg/Kg	*	NC	10 - 120	0	45
Phenanthrene	1.7		0.818	2.60		mg/Kg	*	116	36 - 120	13	41
Phenol	ND	F1	0.818	ND	F1	mg/Kg	*	0	10 - 120	NC	45
Pyrene	0.79	J	0.818	1.44		mg/Kg	*	79	31 - 134	8	43
3 & 4 Methylphenol	ND		0.818	ND		mg/Kg	*	NC	10 - 122	NC	45

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	92		46 - 137
Phenol-d5 (Surr)	0	S1-	26 - 120
Nitrobenzene-d5 (Surr)	51		25 - 120
2-Fluorophenol (Surr)	74		20 - 120
2-Fluorobiphenyl (Surr)	73		34 - 120
2,4,6-Tribromophenol (Surr)	198	S1+	10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-562703/2-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562703

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:44	1
Barium	ND		0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:44	1
Cadmium	0.000402	J	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:44	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:44	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:44	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:44	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:44	1

Lab Sample ID: LCS 240-562703/3-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562703

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Arsenic	2.00	1.99		mg/L		99	50 - 150	
Barium	2.00	1.89		mg/L		95	50 - 150	
Cadmium	1.00	0.986		mg/L		99	50 - 150	
Chromium	1.00	0.965		mg/L		96	50 - 150	
Lead	1.00	0.917		mg/L		92	50 - 150	
Selenium	2.00	2.01		mg/L		101	50 - 150	
Silver	0.100	0.104		mg/L		104	50 - 150	

Lab Sample ID: LB 240-562609/1-B
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562703

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:39	1
Barium	0.00313	J	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:39	1
Cadmium	0.000257	J	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:39	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:39	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:39	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:39	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:39	1

Lab Sample ID: 240-180645-1 MS
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: WC-WS2-11 (7-8')
Prep Type: TCLP
Prep Batch: 562703

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Arsenic	ND		5.00	4.97		mg/L		99	75 - 125	
Barium	0.30	J B	50.0	48.3		mg/L		96	75 - 125	
Cadmium	0.00081	J B	1.00	1.02		mg/L		102	75 - 125	
Chromium	ND		5.00	4.85		mg/L		97	75 - 125	
Lead	0.0083	J	5.00	4.75		mg/L		95	75 - 125	
Selenium	ND		1.00	1.00		mg/L		100	75 - 125	
Silver	ND		1.00	1.02		mg/L		102	75 - 125	

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-180645-1 MSD
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: WC-WS2-11 (7-8')
Prep Type: TCLP
Prep Batch: 562703

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Arsenic	ND		5.00	5.05		mg/L		101	75 - 125	1	20
Barium	0.30	J B	50.0	48.8		mg/L		97	75 - 125	1	20
Cadmium	0.00081	J B	1.00	1.03		mg/L		103	75 - 125	1	20
Chromium	ND		5.00	4.89		mg/L		98	75 - 125	1	20
Lead	0.0083	J	5.00	4.80		mg/L		96	75 - 125	1	20
Selenium	ND		1.00	1.02		mg/L		102	75 - 125	2	20
Silver	ND		1.00	1.03		mg/L		103	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-562705/2-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562705

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:36	1

Lab Sample ID: LCS 240-562705/3-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562705

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
Mercury	0.00500	0.00468		mg/L		94	80 - 120

Lab Sample ID: LB 240-562609/1-C
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562705

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:34	1

Lab Sample ID: 240-180645-1 MS
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: WC-WS2-11 (7-8')
Prep Type: TCLP
Prep Batch: 562705

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	ND		0.00500	0.00511		mg/L		102	80 - 120

Lab Sample ID: 240-180645-1 MSD
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: WC-WS2-11 (7-8')
Prep Type: TCLP
Prep Batch: 562705

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Mercury	ND		0.00500	0.00497		mg/L		99	80 - 120	3	20

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

GC/MS VOA

Prep Batch: 562783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	5035	
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	5035	
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	5035	
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	5035	
MB 240-562783/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562783/2-A	Lab Control Sample	Total/NA	Solid	5035	

Analysis Batch: 563092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-562783/1-A	Method Blank	Total/NA	Solid	8260D	562783
LCS 240-562783/2-A	Lab Control Sample	Total/NA	Solid	8260D	562783

Analysis Batch: 563103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	8260D	562783

Analysis Batch: 563308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	8260D	562783
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	8260D	562783
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	8260D	562783

Analysis Batch: 563382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	8260D	562783
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	8260D	562783
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	8260D	562783
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	8260D	562783
MB 240-562783/1-A	Method Blank	Total/NA	Solid	8260D	562783
LCS 240-562783/2-A	Lab Control Sample	Total/NA	Solid	8260D	562783

GC/MS Semi VOA

Prep Batch: 562719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	3540C	
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	3540C	
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	3540C	
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	3540C	
MB 240-562719/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-562719/25-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562719/26-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562719/2-A	Lab Control Sample	Total/NA	Solid	3540C	
240-180645-1 MS	WC-WS2-11 (7-8')	Total/NA	Solid	3540C	
240-180645-1 MSD	WC-WS2-11 (7-8')	Total/NA	Solid	3540C	

Analysis Batch: 563049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	8270E	562719
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	8270E	562719
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	8270E	562719

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

GC/MS Semi VOA (Continued)

Analysis Batch: 563049 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	8270E	562719
MB 240-562719/1-A	Method Blank	Total/NA	Solid	8270E	562719
LCS 240-562719/25-A	Lab Control Sample	Total/NA	Solid	8270E	562719
LCS 240-562719/26-A	Lab Control Sample	Total/NA	Solid	8270E	562719
LCS 240-562719/2-A	Lab Control Sample	Total/NA	Solid	8270E	562719
240-180645-1 MS	WC-WS2-11 (7-8')	Total/NA	Solid	8270E	562719
240-180645-1 MSD	WC-WS2-11 (7-8')	Total/NA	Solid	8270E	562719

Metals

Leach Batch: 562609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	TCLP	Solid	1311	
240-180645-2	WC-WS2-12 (7-8')	TCLP	Solid	1311	
240-180645-3	WC-WS2-13 (9-10')	TCLP	Solid	1311	
240-180645-4	WC-WS2-14 (10-11')	TCLP	Solid	1311	
LB 240-562609/1-B	Method Blank	TCLP	Solid	1311	
LB 240-562609/1-C	Method Blank	TCLP	Solid	1311	
240-180645-1 MS	WC-WS2-11 (7-8')	TCLP	Solid	1311	
240-180645-1 MSD	WC-WS2-11 (7-8')	TCLP	Solid	1311	

Prep Batch: 562703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	TCLP	Solid	3010A	562609
240-180645-2	WC-WS2-12 (7-8')	TCLP	Solid	3010A	562609
240-180645-3	WC-WS2-13 (9-10')	TCLP	Solid	3010A	562609
240-180645-4	WC-WS2-14 (10-11')	TCLP	Solid	3010A	562609
LB 240-562609/1-B	Method Blank	TCLP	Solid	3010A	562609
MB 240-562703/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-562703/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180645-1 MS	WC-WS2-11 (7-8')	TCLP	Solid	3010A	562609
240-180645-1 MSD	WC-WS2-11 (7-8')	TCLP	Solid	3010A	562609

Prep Batch: 562705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562609
240-180645-2	WC-WS2-12 (7-8')	TCLP	Solid	7470A	562609
240-180645-3	WC-WS2-13 (9-10')	TCLP	Solid	7470A	562609
240-180645-4	WC-WS2-14 (10-11')	TCLP	Solid	7470A	562609
LB 240-562609/1-C	Method Blank	TCLP	Solid	7470A	562609
MB 240-562705/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-562705/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180645-1 MS	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562609
240-180645-1 MSD	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562609

Analysis Batch: 562870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	TCLP	Solid	6010D	562703
240-180645-2	WC-WS2-12 (7-8')	TCLP	Solid	6010D	562703
240-180645-3	WC-WS2-13 (9-10')	TCLP	Solid	6010D	562703
240-180645-4	WC-WS2-14 (10-11')	TCLP	Solid	6010D	562703

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Metals (Continued)

Analysis Batch: 562870 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-562609/1-B	Method Blank	TCLP	Solid	6010D	562703
MB 240-562703/2-A	Method Blank	Total/NA	Solid	6010D	562703
LCS 240-562703/3-A	Lab Control Sample	Total/NA	Solid	6010D	562703
240-180645-1 MS	WC-WS2-11 (7-8')	TCLP	Solid	6010D	562703
240-180645-1 MSD	WC-WS2-11 (7-8')	TCLP	Solid	6010D	562703

Analysis Batch: 562913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562705
240-180645-2	WC-WS2-12 (7-8')	TCLP	Solid	7470A	562705
240-180645-3	WC-WS2-13 (9-10')	TCLP	Solid	7470A	562705
240-180645-4	WC-WS2-14 (10-11')	TCLP	Solid	7470A	562705
LB 240-562609/1-C	Method Blank	TCLP	Solid	7470A	562705
MB 240-562705/2-A	Method Blank	Total/NA	Solid	7470A	562705
LCS 240-562705/3-A	Lab Control Sample	Total/NA	Solid	7470A	562705
240-180645-1 MS	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562705
240-180645-1 MSD	WC-WS2-11 (7-8')	TCLP	Solid	7470A	562705

General Chemistry

Analysis Batch: 562608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180645-1	WC-WS2-11 (7-8')	Total/NA	Solid	Moisture	
240-180645-2	WC-WS2-12 (7-8')	Total/NA	Solid	Moisture	
240-180645-3	WC-WS2-13 (9-10')	Total/NA	Solid	Moisture	
240-180645-4	WC-WS2-14 (10-11')	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562703	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:52
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562705	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:40
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-11 (7-8')

Lab Sample ID: 240-180645-1

Date Collected: 02/18/23 17:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		1	563382	CS	EET CAN	02/24/23 20:58
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		100	563308	CS	EET CAN	02/24/23 20:01
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		50	563049	JMG	EET CAN	02/22/23 20:27

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562703	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 12:13
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562705	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:52
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-12 (7-8')

Lab Sample ID: 240-180645-2

Date Collected: 02/18/23 17:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		1	563382	CS	EET CAN	02/24/23 21:22
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		250	563103	CS	EET CAN	02/23/23 17:18
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		25	563049	JMG	EET CAN	02/22/23 20:03

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562703	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 12:26
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562705	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:54
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-13 (9-10')

Lab Sample ID: 240-180645-3

Date Collected: 02/18/23 17:59

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		1	563382	CS	EET CAN	02/24/23 21:46
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		100	563308	CS	EET CAN	02/24/23 20:26
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		25	563049	JMG	EET CAN	02/22/23 19:15

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562703	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 12:30
TCLP	Leach	1311			562609	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562705	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:56
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-14 (10-11')

Lab Sample ID: 240-180645-4

Date Collected: 02/18/23 18:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		1	563382	CS	EET CAN	02/24/23 22:10
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		100	563308	CS	EET CAN	02/24/23 20:51
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		25	563049	JMG	EET CAN	02/22/23 19:39

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180645-1

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180645-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23



Barberton Facility

Client Arcadis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-18-23 Opened on 2-18-23

OME

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.6 °C

IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA

 Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

Sampling time for Sample #3 confirmed on
Containers = 1759. OME 2-18-23

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/25/2023 12:13:33 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180646-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/25/2023 12:13:33 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	15
Surrogate Summary	61
QC Sample Results	65
QC Association Summary	89
Lab Chronicle	97
Certification Summary	104
Chain of Custody	106
Receipt Checklists	110
Isotope Dilution Summary	111

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Job ID: 240-180646-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180646-1

Receipt

The samples were received on 2/18/2023 7:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.4°C, 3.6°C and 4.4°C

GC/MS VOA

Method 8260D: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-WS2-02 (1-2) (240-180646-2), WC-WS2-03 (2-3) (240-180646-3), WC-WS2-04 (3-4) (240-180646-4), WC-WS2-05 (2-3) (240-180646-5), WC-WS2-06 (3-4) (240-180646-7), WC-WS2-07 (2-3) (240-180646-8), WC-WS2-08 (4-5) (240-180646-9), WC-WS2-09 (5-6) (240-180646-10) and WC-WS2-10 (3-4) (240-180646-11).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563103 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563303 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-562918 and analytical batch 240-563103 is not reported because of high analyte concentrations in the parent sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563180 recovered outside acceptance criteria, low biased, for Pyridine. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples: WC-WS2-COMP (01-07) (240-180646-6) and WC-WS2-COMP (08-14) (240-180646-12) were non-detect for the analyte, the data has been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563049 recovered above the upper control limit for 2-Nitrophenol and Atrazine. The samples associated with this CCV were non-detect for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-WS2-01 (1-1.5) (240-180646-1) and WC-WS2-02 (1-2) (240-180646-2).

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563049 recovered outside acceptance criteria, low biased, for bis (2-chloroisopropyl) ether and 4-Nitrophenol. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples: WC-WS2-01 (1-1.5) (240-180646-1) and WC-WS2-02 (1-2) (240-180646-2) were non-detect for the analytes, the data has been reported.

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-WS2-01 (1-1.5) (240-180646-1), WC-WS2-02 (1-2) (240-180646-2), WC-WS2-03 (2-3) (240-180646-3), WC-WS2-04 (3-4) (240-180646-4), WC-WS2-05 (2-3) (240-180646-5), WC-WS2-06 (3-4) (240-180646-7), WC-WS2-07 (2-3) (240-180646-8), WC-WS2-08 (4-5) (240-180646-9), WC-WS2-09 (5-6) (240-180646-10), WC-WS2-10 (3-4) (240-180646-11), (240-180646-G-3-E MS), (240-180646-G-3-F MSD) and WC-WS2-COMP (08-14) (240-180646-12). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Job ID: 240-180646-1 (Continued)

Laboratory: Eurofins Canton (Continued)

PCBs

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-WS2-COMP (01-07) (240-180646-6) and WC-WS2-COMP (08-14) (240-180646-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides

Method 8081B: The continuing calibration verification (CCV) associated with batch 240-563004 was outside %D criteria for the individual peaks 4 and 5 used for the quantitation of Toxaphene. The average %D is in control for this analyte and samples associated with this CCV were non-detects for the affected analyte; therefore, corrective action was not performed. The associated samples are impacted: WC-WS2-COMP (01-07) (240-180646-6) and WC-WS2-COMP (08-14) (240-180646-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

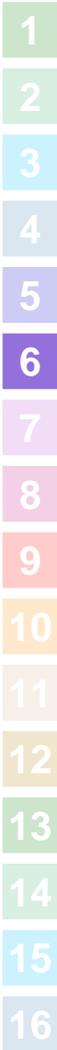
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180646-1	WC-WS2-01 (1-1.5)	Solid	02/18/23 15:55	02/18/23 19:05
240-180646-2	WC-WS2-02 (1-2)	Solid	02/18/23 16:10	02/18/23 19:05
240-180646-3	WC-WS2-03 (2-3)	Solid	02/18/23 16:15	02/18/23 19:05
240-180646-4	WC-WS2-04 (3-4)	Solid	02/18/23 16:30	02/18/23 19:05
240-180646-5	WC-WS2-05 (2-3)	Solid	02/18/23 16:35	02/18/23 19:05
240-180646-6	WC-WS2-COMP (01-07)	Solid	02/18/23 00:00	02/18/23 19:05
240-180646-7	WC-WS2-06 (3-4)	Solid	02/18/23 16:52	02/18/23 19:05
240-180646-8	WC-WS2-07 (2-3)	Solid	02/18/23 17:00	02/18/23 19:05
240-180646-9	WC-WS2-08 (4-5)	Solid	02/18/23 17:10	02/18/23 19:05
240-180646-10	WC-WS2-09 (5-6)	Solid	02/18/23 17:20	02/18/23 19:05
240-180646-11	WC-WS2-10 (3-4)	Solid	02/18/23 17:28	02/18/23 19:05
240-180646-12	WC-WS2-COMP (08-14)	Solid	02/18/23 00:00	02/18/23 19:05



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Lab Sample ID: 240-180646-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.0		0.45	0.058	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.16	J	0.45	0.085	mg/Kg	25	✳	8270E	Total/NA
Acenaphthylene	0.20	J	0.45	0.12	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.34	J	0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.93		0.45	0.10	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.84		0.45	0.28	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.4		0.45	0.19	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.73		0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.43	J	0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Chrysene	1.4		0.45	0.044	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	0.87	J	1.5	0.39	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	2.3		0.45	0.13	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.20	J	0.45	0.082	mg/Kg	25	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.54		0.45	0.22	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	2.0		0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	2.1		0.45	0.066	mg/Kg	25	✳	8270E	Total/NA
Pyrene	2.1		0.45	0.064	mg/Kg	25	✳	8270E	Total/NA
Barium	0.38	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0016	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0093	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-02 (1-2)

Lab Sample ID: 240-180646-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.5		0.47	0.062	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.31	J	0.47	0.090	mg/Kg	25	✳	8270E	Total/NA
Acenaphthylene	0.19	J	0.47	0.13	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.64		0.47	0.076	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.96		0.47	0.11	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.60		0.47	0.30	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.1		0.47	0.21	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.36	J	0.47	0.22	mg/Kg	25	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.34	J	0.47	0.22	mg/Kg	25	✳	8270E	Total/NA
Chrysene	1.2		0.47	0.047	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	1.0	J	1.6	0.41	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	2.1		0.47	0.14	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.31	J	0.47	0.087	mg/Kg	25	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.34	J	0.47	0.23	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	2.2		0.47	0.076	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	2.3		0.47	0.071	mg/Kg	25	✳	8270E	Total/NA
Pyrene	1.7		0.47	0.068	mg/Kg	25	✳	8270E	Total/NA
Barium	0.32	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.010	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	2.3		0.37	0.049	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.12	J	0.37	0.071	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.20	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.57		0.37	0.085	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3) (Continued)

Lab Sample ID: 240-180646-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]pyrene	0.41		0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.72		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.29	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.28	J	0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.68		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.75	J	1.2	0.32	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.2		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.15	J	0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.22	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.3		0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.5		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.0		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
Barium	0.32	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0014	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0098	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.6		0.35	0.045	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.22	J	0.35	0.066	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.16	J	0.35	0.093	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.29	J	0.35	0.056	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.86		0.35	0.079	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.68		0.35	0.22	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.3		0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.27	J	0.35	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.40		0.35	0.16	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.98		0.35	0.034	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.1	J	1.2	0.30	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.6		0.35	0.10	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.21	J	0.35	0.063	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.25	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.5		0.35	0.056	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.1		0.35	0.051	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.4		0.35	0.049	mg/Kg	20	✳	8270E	Total/NA
Barium	0.39	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0074	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.3		0.34	0.045	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.13	J	0.34	0.065	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.10	J	0.34	0.092	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.18	J	0.34	0.055	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.50		0.34	0.078	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.43		0.34	0.21	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.84		0.34	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.25	J	0.34	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.24	J	0.34	0.16	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3) (Continued)

Lab Sample ID: 240-180646-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	0.59		0.34	0.034	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.90	J	1.1	0.30	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.93		0.34	0.10	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.13	J	0.34	0.063	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.2		0.34	0.055	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.7		0.34	0.051	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.84		0.34	0.049	mg/Kg	20	✳	8270E	Total/NA
Barium	0.27	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0080	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.015	J	0.25	0.0012	mg/L	1		8260D	TCLP
Perfluorooctanoic acid	0.30	J	0.68	0.23	ng/g	1	✳	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.33	J	0.68	0.23	ng/g	1	✳	537 IDA	Total/NA

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.4		0.39	0.051	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.33	J	0.39	0.074	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.16	J	0.39	0.10	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.40		0.39	0.062	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.83		0.39	0.088	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.56		0.39	0.24	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.2		0.39	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.27	J	0.39	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.46		0.39	0.18	mg/Kg	20	✳	8270E	Total/NA
Chrysene	1.3		0.39	0.039	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.1	J	1.3	0.34	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.0		0.39	0.12	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.29	J	0.39	0.071	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.20	J	0.39	0.19	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.4		0.39	0.062	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.2		0.39	0.058	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.6		0.39	0.055	mg/Kg	20	✳	8270E	Total/NA
Barium	0.27	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00089	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0074	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.0		0.37	0.049	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.15	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.45		0.37	0.085	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.38		0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.75		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.18	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.23	J	0.37	0.17	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3) (Continued)

Lab Sample ID: 240-180646-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	0.53		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.84	J	1.2	0.32	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.86		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.11	J	0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.0		0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.6		0.37	0.056	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.74		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
Barium	0.31	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0090	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.24	J	0.25	0.12	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	2.6		0.36	0.046	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.16	J	0.36	0.068	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.11	J	0.36	0.095	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.23	J	0.36	0.057	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.58		0.36	0.081	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.47		0.36	0.22	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.97		0.36	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.18	J	0.36	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.27	J	0.36	0.16	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.70		0.36	0.035	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.78	J	1.2	0.31	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.3		0.36	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.18	J	0.36	0.065	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.7		0.36	0.057	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.6		0.36	0.053	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.1		0.36	0.051	mg/Kg	20	✳	8270E	Total/NA
Barium	0.32	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00097	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0076	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	2.5		0.37	0.048	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.093	J	0.37	0.070	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.16	J	0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.48		0.37	0.083	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.34	J	0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.75		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.18	J	0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.59		0.37	0.036	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.70	J	1.2	0.32	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.81		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.094	J	0.37	0.067	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.7		0.37	0.059	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.4		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.72		0.37	0.052	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6) (Continued)

Lab Sample ID: 240-180646-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.23	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0096	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-10 (3-4)

Lab Sample ID: 240-180646-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	3.2		0.35	0.046	mg/Kg	20	⊛	8270E	Total/NA
Acenaphthene	0.18	J	0.35	0.067	mg/Kg	20	⊛	8270E	Total/NA
Acenaphthylene	0.11	J	0.35	0.094	mg/Kg	20	⊛	8270E	Total/NA
Anthracene	0.22	J	0.35	0.057	mg/Kg	20	⊛	8270E	Total/NA
Benzo[a]anthracene	0.62		0.35	0.080	mg/Kg	20	⊛	8270E	Total/NA
Benzo[a]pyrene	0.41		0.35	0.22	mg/Kg	20	⊛	8270E	Total/NA
Benzo[b]fluoranthene	0.89		0.35	0.15	mg/Kg	20	⊛	8270E	Total/NA
Benzo[k]fluoranthene	0.31	J	0.35	0.16	mg/Kg	20	⊛	8270E	Total/NA
Chrysene	0.65		0.35	0.035	mg/Kg	20	⊛	8270E	Total/NA
Dibenzofuran	0.95	J	1.2	0.31	mg/Kg	20	⊛	8270E	Total/NA
Fluoranthene	1.2		0.35	0.10	mg/Kg	20	⊛	8270E	Total/NA
Fluorene	0.16	J	0.35	0.064	mg/Kg	20	⊛	8270E	Total/NA
Naphthalene	2.2		0.35	0.057	mg/Kg	20	⊛	8270E	Total/NA
Phenanthrene	1.8		0.35	0.052	mg/Kg	20	⊛	8270E	Total/NA
Pyrene	1.0		0.35	0.050	mg/Kg	20	⊛	8270E	Total/NA
Barium	0.30	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0087	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	0.27	J	0.71	0.24	ng/g	1	⊛	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.30	J	0.71	0.24	ng/g	1	⊛	537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Lab Sample ID: 240-180646-1

Date Collected: 02/18/23 15:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		15	4.8	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,1,2,2-Tetrachloroethane	ND		15	9.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15	4.1	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,1,2-Trichloroethane	ND		15	3.5	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,1-Dichloroethane	ND		15	2.9	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,1-Dichloroethene	ND		15	5.0	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,2,4-Trichlorobenzene	ND		15	8.1	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,2-Dibromo-3-Chloropropane	ND		31	14	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Ethylene Dibromide	ND		15	4.8	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,2-Dichlorobenzene	ND		15	7.3	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,2-Dichloroethane	ND		15	2.9	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,2-Dichloropropane	ND		15	2.3	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,3-Dichlorobenzene	ND		15	2.8	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
1,4-Dichlorobenzene	ND		15	3.4	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
2-Butanone (MEK)	ND		61	9.6	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
2-Hexanone	ND		61	16	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
4-Methyl-2-pentanone (MIBK)	ND		61	15	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Acetone	ND		61	15	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Benzene	ND		15	2.6	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Dichlorobromomethane	ND		15	3.7	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Bromoform	ND		15	14	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Bromomethane	ND		15	10	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Carbon disulfide	ND		15	6.6	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Carbon tetrachloride	ND		15	6.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Chlorobenzene	ND		15	2.1	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Chloroethane	ND		15	9.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Chloroform	ND		15	3.3	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Chloromethane	ND		15	4.0	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
cis-1,2-Dichloroethene	ND		15	2.4	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
cis-1,3-Dichloropropene	ND		15	7.6	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Cyclohexane	ND		31	10	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Chlorodibromomethane	ND		15	7.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Dichlorodifluoromethane	ND		15	3.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Ethylbenzene	ND		15	2.9	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Isopropylbenzene	ND		15	2.3	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Methyl acetate	ND		76	10	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Methyl tert-butyl ether	ND		15	2.3	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Methylcyclohexane	ND		31	4.0	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Methylene Chloride	ND		31	23	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Styrene	ND		15	3.2	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Tetrachloroethene	ND		15	5.9	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Toluene	ND		15	15	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
trans-1,2-Dichloroethene	ND		15	3.8	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
trans-1,3-Dichloropropene	ND		15	6.4	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Trichloroethene	ND		15	8.7	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Trichlorofluoromethane	ND		15	8.4	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50
Vinyl chloride	ND		0.31	0.15	mg/Kg	✱	02/20/23 16:48	02/23/23 22:27	1
Xylenes, Total	ND		31	5.6	mg/Kg	✱	02/20/23 16:48	02/24/23 18:11	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Lab Sample ID: 240-180646-1

Date Collected: 02/18/23 15:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/20/23 16:48	02/23/23 22:27	1
Toluene-d8 (Surr)	78		56 - 125	02/20/23 16:48	02/24/23 18:11	50
Dibromofluoromethane (Surr)	87		41 - 138	02/20/23 16:48	02/23/23 22:27	1
Dibromofluoromethane (Surr)	79		41 - 138	02/20/23 16:48	02/24/23 18:11	50
4-Bromofluorobenzene (Surr)	99		41 - 143	02/20/23 16:48	02/23/23 22:27	1
4-Bromofluorobenzene (Surr)	74		41 - 143	02/20/23 16:48	02/24/23 18:11	50
1,2-Dichloroethane-d4 (Surr)	97		58 - 125	02/20/23 16:48	02/23/23 22:27	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125	02/20/23 16:48	02/24/23 18:11	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4-Dinitrophenol	ND		9.8	4.2	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,4-Dinitrotoluene	ND		6.0	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Methylnaphthalene	3.0		0.45	0.058	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Methylphenol	ND		6.0	0.92	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4,6-Dinitro-2-methylphenol	ND		9.8	2.4	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Chloroaniline	ND		4.5	0.89	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
4-Nitrophenol	ND		9.8	2.8	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Acenaphthene	0.16	J	0.45	0.085	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Acenaphthylene	0.20	J	0.45	0.12	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Acetophenone	ND		3.0	0.33	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Anthracene	0.34	J	0.45	0.072	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzo[a]anthracene	0.93		0.45	0.10	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzo[a]pyrene	0.84		0.45	0.28	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzo[b]fluoranthene	1.4		0.45	0.19	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzo[g,h,i]perylene	0.73		0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Benzo[k]fluoranthene	0.43	J	0.45	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/20/23 10:04	02/22/23 17:39	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Lab Sample ID: 240-180646-1

Date Collected: 02/18/23 15:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.8	2.2	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Carbazole	ND		1.5	0.57	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Chrysene	1.4		0.45	0.044	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Dibenzofuran	0.87	J	1.5	0.39	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Diethyl phthalate	ND		2.1	0.92	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Di-n-octyl phthalate	ND		2.1	0.83	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Fluoranthene	2.3		0.45	0.13	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Fluorene	0.20	J	0.45	0.082	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Hexachlorocyclopentadiene	ND		9.8	1.8	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Hexachloroethane	ND		1.5	0.27	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Indeno[1,2,3-cd]pyrene	0.54		0.45	0.22	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Isophorone	ND		1.5	0.36	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Naphthalene	2.0		0.45	0.072	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Nitrobenzene	ND		3.0	0.39	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Pentachlorophenol	ND		4.5	1.7	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Phenanthrene	2.1		0.45	0.066	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Phenol	ND		1.5	0.24	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
Pyrene	2.1		0.45	0.064	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25
3 & 4 Methylphenol	ND		12	0.86	mg/Kg	✳	02/20/23 10:04	02/22/23 17:39	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	100		46 - 137	02/20/23 10:04	02/22/23 17:39	25
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 17:39	25
Nitrobenzene-d5 (Surr)	61		25 - 120	02/20/23 10:04	02/22/23 17:39	25
2-Fluorophenol (Surr)	76		20 - 120	02/20/23 10:04	02/22/23 17:39	25
2-Fluorobiphenyl (Surr)	92		34 - 120	02/20/23 10:04	02/22/23 17:39	25
2,4,6-Tribromophenol (Surr)	127	S1+	10 - 120	02/20/23 10:04	02/22/23 17:39	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 09:54	1
Barium	0.38	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 09:54	1
Cadmium	0.0016	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 09:54	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 09:54	1
Lead	0.0093	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 09:54	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 09:54	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 09:54	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Lab Sample ID: 240-180646-1

Date Collected: 02/18/23 15:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.3		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	16.7		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-02 (1-2)

Lab Sample ID: 240-180646-2

Date Collected: 02/18/23 16:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		13	4.1	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,1,2,2-Tetrachloroethane	ND		13	7.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		13	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,1,2-Trichloroethane	ND		13	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,1-Dichloroethane	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,1-Dichloroethene	ND		13	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,2,4-Trichlorobenzene	ND		13	7.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,2-Dibromo-3-Chloropropane	ND		26	12	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Ethylene Dibromide	ND		13	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,2-Dichlorobenzene	ND		13	6.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,2-Dichloroethane	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,2-Dichloropropane	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,3-Dichlorobenzene	ND		13	2.4	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
1,4-Dichlorobenzene	ND		13	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
2-Butanone (MEK)	ND		53	8.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
2-Hexanone	ND		53	14	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
4-Methyl-2-pentanone (MIBK)	ND		53	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Acetone	ND		53	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Benzene	ND		13	2.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Dichlorobromomethane	ND		13	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Bromoform	ND		13	12	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Bromomethane	ND		13	8.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Carbon disulfide	ND		13	5.7	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Carbon tetrachloride	ND		13	5.4	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Chlorobenzene	ND		13	1.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Chloroethane	ND		13	7.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Chloroform	ND		13	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Chloromethane	ND		13	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
cis-1,2-Dichloroethene	ND		13	2.1	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
cis-1,3-Dichloropropene	ND		13	6.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Cyclohexane	ND		26	8.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Chlorodibromomethane	ND		13	6.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Dichlorodifluoromethane	ND		13	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Ethylbenzene	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Isopropylbenzene	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Methyl acetate	ND		66	8.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Methyl tert-butyl ether	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Methylcyclohexane	ND		26	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Methylene Chloride	ND		26	20	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Styrene	ND		13	2.7	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Tetrachloroethene	ND		13	5.1	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Toluene	ND		13	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
trans-1,2-Dichloroethene	ND		13	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
trans-1,3-Dichloropropene	ND		13	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Trichloroethene	ND		13	7.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Trichlorofluoromethane	ND		13	7.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50
Vinyl chloride	ND		0.26	0.13	mg/Kg	✱	02/21/23 13:30	02/23/23 23:40	1
Xylenes, Total	ND		26	4.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:29	50

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-02 (1-2)

Lab Sample ID: 240-180646-2

Date Collected: 02/18/23 16:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		56 - 125	02/21/23 13:30	02/23/23 23:40	1
Toluene-d8 (Surr)	78		56 - 125	02/21/23 13:30	02/24/23 12:29	50
Dibromofluoromethane (Surr)	84		41 - 138	02/21/23 13:30	02/23/23 23:40	1
Dibromofluoromethane (Surr)	83		41 - 138	02/21/23 13:30	02/24/23 12:29	50
4-Bromofluorobenzene (Surr)	98		41 - 143	02/21/23 13:30	02/23/23 23:40	1
4-Bromofluorobenzene (Surr)	75		41 - 143	02/21/23 13:30	02/24/23 12:29	50
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/21/23 13:30	02/23/23 23:40	1
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	02/21/23 13:30	02/24/23 12:29	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.54	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
bis (2-chloroisopropyl) ether	ND		3.2	0.32	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4,5-Trichlorophenol	ND		4.7	2.2	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4,6-Trichlorophenol	ND		4.7	2.0	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4-Dichlorophenol	ND		4.7	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4-Dimethylphenol	ND		4.7	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4-Dinitrophenol	ND		10	4.5	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,4-Dinitrotoluene	ND		6.3	2.0	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2,6-Dinitrotoluene	ND		6.3	1.8	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Chlorophenol	ND		1.6	0.32	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Methylnaphthalene	3.5		0.47	0.062	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Methylphenol	ND		6.3	0.98	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Nitroaniline	ND		6.3	1.3	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
2-Nitrophenol	ND		1.6	0.41	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
3,3'-Dichlorobenzidine	ND		3.2	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
3-Nitroaniline	ND		6.3	1.6	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Chloro-3-methylphenol	ND		4.7	1.4	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Chloroaniline	ND		4.7	0.95	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Nitroaniline	ND		6.3	1.9	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
4-Nitrophenol	ND		10	3.0	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Acenaphthene	0.31	J	0.47	0.090	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Acenaphthylene	0.19	J	0.47	0.13	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Acetophenone	ND		3.2	0.35	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Anthracene	0.64		0.47	0.076	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Atrazine	ND		6.3	1.1	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzaldehyde	ND		3.2	0.73	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzo[a]anthracene	0.96		0.47	0.11	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzo[a]pyrene	0.60		0.47	0.30	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzo[b]fluoranthene	1.1		0.47	0.21	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzo[g,h,i]perylene	0.36	J	0.47	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Benzo[k]fluoranthene	0.34	J	0.47	0.22	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Bis(2-chloroethoxy)methane	ND		3.2	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Bis(2-chloroethyl)ether	ND		3.2	0.38	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25
Butyl benzyl phthalate	ND		2.2	0.70	mg/Kg	☼	02/20/23 10:04	02/22/23 18:03	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-02 (1-2)

Lab Sample ID: 240-180646-2

Date Collected: 02/18/23 16:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.4	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Carbazole	ND		1.6	0.60	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Chrysene	1.2		0.47	0.047	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Dibenz(a,h)anthracene	ND		0.47	0.22	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Dibenzofuran	1.0 J		1.6	0.41	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Diethyl phthalate	ND		2.2	0.98	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Dimethyl phthalate	ND		2.2	0.44	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Di-n-octyl phthalate	ND		2.2	0.89	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Fluoranthene	2.1		0.47	0.14	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Fluorene	0.31 J		0.47	0.087	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Hexachlorobenzene	ND		0.47	0.090	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Hexachlorobutadiene	ND		1.6	0.38	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Hexachlorocyclopentadiene	ND		10	2.0	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Hexachloroethane	ND		1.6	0.28	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Indeno[1,2,3-cd]pyrene	0.34 J		0.47	0.23	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Isophorone	ND		1.6	0.38	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
N-Nitrosodi-n-propylamine	ND		1.6	0.35	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
N-Nitrosodiphenylamine	ND		1.6	0.38	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Naphthalene	2.2		0.47	0.076	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Nitrobenzene	ND		3.2	0.41	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Pentachlorophenol	ND		4.7	1.8	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Phenanthrene	2.3		0.47	0.071	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Phenol	ND		1.6	0.25	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
Pyrene	1.7		0.47	0.068	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25
3 & 4 Methylphenol	ND		13	0.92	mg/Kg	✳	02/20/23 10:04	02/22/23 18:03	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	82		46 - 137	02/20/23 10:04	02/22/23 18:03	25
Phenol-d5 (Surr)	0	S1-	26 - 120	02/20/23 10:04	02/22/23 18:03	25
Nitrobenzene-d5 (Surr)	48		25 - 120	02/20/23 10:04	02/22/23 18:03	25
2-Fluorophenol (Surr)	59		20 - 120	02/20/23 10:04	02/22/23 18:03	25
2-Fluorobiphenyl (Surr)	72		34 - 120	02/20/23 10:04	02/22/23 18:03	25
2,4,6-Tribromophenol (Surr)	132	S1+	10 - 120	02/20/23 10:04	02/22/23 18:03	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 09:58	1
Barium	0.32 J B		0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 09:58	1
Cadmium	0.0013 J B		0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 09:58	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 09:58	1
Lead	0.010 J		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 09:58	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 09:58	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 09:58	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:46	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-02 (1-2)

Lab Sample ID: 240-180646-2

Date Collected: 02/18/23 16:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.7		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	20.3		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		14	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,1,2,2-Tetrachloroethane	ND		14	8.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		14	3.7	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,1,2-Trichloroethane	ND		14	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,1-Dichloroethane	ND		14	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,1-Dichloroethene	ND		14	4.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,2,4-Trichlorobenzene	ND		14	7.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,2-Dibromo-3-Chloropropane	ND		27	12	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Ethylene Dibromide	ND		14	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,2-Dichlorobenzene	ND		14	6.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,2-Dichloroethane	ND		14	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,2-Dichloropropane	ND		14	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,3-Dichlorobenzene	ND		14	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
1,4-Dichlorobenzene	ND		14	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
2-Butanone (MEK)	ND		55	8.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
2-Hexanone	ND		55	14	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
4-Methyl-2-pentanone (MIBK)	ND		55	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Acetone	ND		55	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Benzene	ND		14	2.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Dichlorobromomethane	ND		14	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Bromoform	ND		14	12	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Bromomethane	ND		14	9.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Carbon disulfide	ND		14	5.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Carbon tetrachloride	ND		14	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Chlorobenzene	ND		14	1.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Chloroethane	ND		14	8.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Chloroform	ND		14	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Chloromethane	ND		14	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
cis-1,2-Dichloroethene	ND		14	2.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
cis-1,3-Dichloropropene	ND		14	6.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Cyclohexane	ND		27	8.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Chlorodibromomethane	ND		14	6.4	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Dichlorodifluoromethane	ND		14	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Ethylbenzene	ND		14	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Isopropylbenzene	ND		14	2.1	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Methyl acetate	ND		68	9.2	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Methyl tert-butyl ether	ND		14	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Methylcyclohexane	ND		27	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Methylene Chloride	ND		27	21	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Styrene	ND		14	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Tetrachloroethene	ND		14	5.3	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Toluene	ND		14	13	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
trans-1,2-Dichloroethene	ND		14	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
trans-1,3-Dichloropropene	ND		14	5.7	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Trichloroethene	ND		14	7.8	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Trichlorofluoromethane	ND		14	7.5	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50
Vinyl chloride	ND		0.27	0.13	mg/Kg	✱	02/21/23 13:30	02/23/23 17:59	1
Xylenes, Total	ND		27	5.0	mg/Kg	✱	02/21/23 13:30	02/24/23 12:50	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/23/23 17:59	1
Toluene-d8 (Surr)	80		56 - 125	02/21/23 13:30	02/24/23 12:50	50
Dibromofluoromethane (Surr)	85		41 - 138	02/21/23 13:30	02/23/23 17:59	1
Dibromofluoromethane (Surr)	81		41 - 138	02/21/23 13:30	02/24/23 12:50	50
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/23/23 17:59	1
4-Bromofluorobenzene (Surr)	75		41 - 143	02/21/23 13:30	02/24/23 12:50	50
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/21/23 13:30	02/23/23 17:59	1
1,2-Dichloroethane-d4 (Surr)	79		58 - 125	02/21/23 13:30	02/24/23 12:50	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4-Dimethylphenol	ND		3.7	0.99	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4-Dinitrophenol	ND		8.2	3.5	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,4-Dinitrotoluene	ND		5.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Methylnaphthalene	2.3		0.37	0.049	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Methylphenol	ND	F1	5.0	0.77	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Nitroaniline	ND		5.0	0.99	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
3,3'-Dichlorobenzidine	ND	F1	2.5	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4,6-Dinitro-2-methylphenol	ND		8.2	2.0	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Chloroaniline	ND	F1	3.7	0.75	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
4-Nitrophenol	ND		8.2	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Acenaphthene	0.12	J	0.37	0.071	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Acenaphthylene	ND		0.37	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Acetophenone	ND		2.5	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Anthracene	0.20	J	0.37	0.060	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Atrazine	ND		5.0	0.89	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzo[a]anthracene	0.57		0.37	0.085	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzo[a]pyrene	0.41		0.37	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzo[b]fluoranthene	0.72		0.37	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzo[g,h,i]perylene	0.29	J	0.37	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Benzo[k]fluoranthene	0.28	J	0.37	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20
Butyl benzyl phthalate	ND	F1	1.7	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 11:30	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.2	1.9	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Carbazole	ND		1.2	0.47	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Chrysene	0.68		0.37	0.037	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Dibenzofuran	0.75	J	1.2	0.32	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Diethyl phthalate	ND	F1	1.7	0.77	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Di-n-butyl phthalate	ND		1.7	1.3	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Di-n-octyl phthalate	ND	F1	1.7	0.70	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Fluoranthene	1.2		0.37	0.11	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Fluorene	0.15	J	0.37	0.068	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Hexachlorobenzene	ND		0.37	0.071	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Hexachlorocyclopentadiene	ND		8.2	1.5	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Indeno[1,2,3-cd]pyrene	0.22	J	0.37	0.18	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Isophorone	ND		1.2	0.30	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Naphthalene	1.3		0.37	0.060	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Pentachlorophenol	ND	F1	3.7	1.4	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Phenanthrene	1.5		0.37	0.055	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Phenol	ND		1.2	0.20	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
Pyrene	1.0		0.37	0.053	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20
3 & 4 Methylphenol	ND	F1	9.9	0.72	mg/Kg	☆	02/21/23 09:46	02/23/23 11:30	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	69		46 - 137	02/21/23 09:46	02/23/23 11:30	20
Phenol-d5 (Surr)	53		26 - 120	02/21/23 09:46	02/23/23 11:30	20
Nitrobenzene-d5 (Surr)	48		25 - 120	02/21/23 09:46	02/23/23 11:30	20
2-Fluorophenol (Surr)	59		20 - 120	02/21/23 09:46	02/23/23 11:30	20
2-Fluorobiphenyl (Surr)	65		34 - 120	02/21/23 09:46	02/23/23 11:30	20
2,4,6-Tribromophenol (Surr)	85		10 - 120	02/21/23 09:46	02/23/23 11:30	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:03	1
Barium	0.32	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:03	1
Cadmium	0.0014	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:03	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:03	1
Lead	0.0098	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:03	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:03	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:03	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.1		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	18.9		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		31	9.5	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,1,2,2-Tetrachloroethane	ND		31	18	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		31	8.2	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,1,2-Trichloroethane	ND		31	7.0	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,1-Dichloroethane	ND		31	5.9	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,1-Dichloroethene	ND		31	10	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,2,4-Trichlorobenzene	ND		31	16	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,2-Dibromo-3-Chloropropane	ND		61	27	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Ethylene Dibromide	ND		31	9.7	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,2-Dichlorobenzene	ND		31	15	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,2-Dichloroethane	ND		31	5.8	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,2-Dichloropropane	ND		31	4.5	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,3-Dichlorobenzene	ND		31	5.6	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
1,4-Dichlorobenzene	ND		31	6.7	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
2-Butanone (MEK)	ND		120	19	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
2-Hexanone	ND		120	32	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
4-Methyl-2-pentanone (MIBK)	ND		120	29	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Acetone	ND		120	30	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Benzene	ND		31	5.1	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Dichlorobromomethane	ND		31	7.4	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Bromoform	ND		31	28	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Bromomethane	ND		31	20	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Carbon disulfide	ND		31	13	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Carbon tetrachloride	ND		31	12	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Chlorobenzene	ND		31	4.3	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Chloroethane	ND		31	18	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Chloroform	ND		31	6.6	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Chloromethane	ND		31	8.1	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
cis-1,2-Dichloroethene	ND		31	4.9	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
cis-1,3-Dichloropropene	ND		31	15	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Cyclohexane	ND		61	20	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Chlorodibromomethane	ND		31	14	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Dichlorodifluoromethane	ND		31	6.5	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Ethylbenzene	ND		31	5.8	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Isopropylbenzene	ND		31	4.6	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Methyl acetate	ND		150	21	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Methyl tert-butyl ether	ND		31	4.5	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Methylcyclohexane	ND		61	8.1	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Methylene Chloride	ND		61	47	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Styrene	ND		31	6.4	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Tetrachloroethene	ND		31	12	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Toluene	ND		31	29	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
trans-1,2-Dichloroethene	ND		31	7.6	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
trans-1,3-Dichloropropene	ND		31	13	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Trichloroethene	ND		31	17	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Trichlorofluoromethane	ND		31	17	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100
Vinyl chloride	ND		0.31	0.15	mg/Kg	✱	02/21/23 13:30	02/24/23 00:28	1
Xylenes, Total	ND		61	11	mg/Kg	✱	02/21/23 13:30	02/23/23 10:10	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/23/23 10:10	100
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 00:28	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/23/23 10:10	100
Dibromofluoromethane (Surr)	88		41 - 138	02/21/23 13:30	02/24/23 00:28	1
4-Bromofluorobenzene (Surr)	74		41 - 143	02/21/23 13:30	02/23/23 10:10	100
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/24/23 00:28	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/23/23 10:10	100
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	02/21/23 13:30	02/24/23 00:28	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.39	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4-Dimethylphenol	ND		3.5	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4-Dinitrophenol	ND		7.6	3.3	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,4-Dinitrotoluene	ND		4.6	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2,6-Dinitrotoluene	ND		4.6	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Chloronaphthalene	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Methylnaphthalene	3.6		0.35	0.045	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Methylphenol	ND		4.6	0.72	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Nitroaniline	ND		4.6	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
2-Nitrophenol	ND		1.2	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
3,3'-Dichlorobenzidine	ND		2.3	0.99	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
3-Nitroaniline	ND		4.6	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4,6-Dinitro-2-methylphenol	ND		7.6	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Bromophenyl phenyl ether	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Chloro-3-methylphenol	ND		3.5	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Chloroaniline	ND		3.5	0.69	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Chlorophenyl phenyl ether	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Nitroaniline	ND		4.6	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
4-Nitrophenol	ND		7.6	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Acenaphthene	0.22	J	0.35	0.066	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Acenaphthylene	0.16	J	0.35	0.093	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Acetophenone	ND		2.3	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Anthracene	0.29	J	0.35	0.056	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Atrazine	ND		4.6	0.83	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzaldehyde	ND		2.3	0.53	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzo[a]anthracene	0.86		0.35	0.079	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzo[a]pyrene	0.68		0.35	0.22	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzo[b]fluoranthene	1.3		0.35	0.15	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzo[g,h,i]perylene	0.27	J	0.35	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Benzo[k]fluoranthene	0.40		0.35	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20
Butyl benzyl phthalate	ND		1.6	0.51	mg/Kg	☼	02/21/23 09:46	02/23/23 12:48	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.6	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Carbazole	ND		1.2	0.44	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Chrysene	0.98		0.35	0.034	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Dibenzofuran	1.1	J	1.2	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Diethyl phthalate	ND		1.6	0.72	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Dimethyl phthalate	ND		1.6	0.32	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Di-n-octyl phthalate	ND		1.6	0.65	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Fluoranthene	1.6		0.35	0.10	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Fluorene	0.21	J	0.35	0.063	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Hexachlorobenzene	ND		0.35	0.066	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Hexachlorocyclopentadiene	ND		7.6	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Indeno[1,2,3-cd]pyrene	0.25	J	0.35	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Isophorone	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
N-Nitrosodi-n-propylamine	ND		1.2	0.25	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Naphthalene	2.5		0.35	0.056	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Pentachlorophenol	ND		3.5	1.3	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Phenanthrene	2.1		0.35	0.051	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Phenol	ND		1.2	0.18	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
Pyrene	1.4		0.35	0.049	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20
3 & 4 Methylphenol	ND		9.2	0.67	mg/Kg	✳	02/21/23 09:46	02/23/23 12:48	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	75		46 - 137	02/21/23 09:46	02/23/23 12:48	20
Phenol-d5 (Surr)	55		26 - 120	02/21/23 09:46	02/23/23 12:48	20
Nitrobenzene-d5 (Surr)	68		25 - 120	02/21/23 09:46	02/23/23 12:48	20
2-Fluorophenol (Surr)	77		20 - 120	02/21/23 09:46	02/23/23 12:48	20
2-Fluorobiphenyl (Surr)	72		34 - 120	02/21/23 09:46	02/23/23 12:48	20
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 12:48	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:07	1
Barium	0.39	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:07	1
Cadmium	0.0013	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:07	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:07	1
Lead	0.0074	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:07	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:07	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:07	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.6

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.6		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	13.4		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		23	7.2	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,1,2,2-Tetrachloroethane	ND		23	14	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		23	6.1	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,1,2-Trichloroethane	ND		23	5.2	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,1-Dichloroethane	ND		23	4.4	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,1-Dichloroethene	ND		23	7.5	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,2,4-Trichlorobenzene	ND		23	12	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,2-Dibromo-3-Chloropropane	ND		46	20	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Ethylene Dibromide	ND		23	7.2	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,2-Dichlorobenzene	ND		23	11	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,2-Dichloroethane	ND		23	4.3	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,2-Dichloropropane	ND		23	3.4	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,3-Dichlorobenzene	ND		23	4.2	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
1,4-Dichlorobenzene	ND		23	5.0	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
2-Butanone (MEK)	ND		92	14	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
2-Hexanone	ND		92	24	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
4-Methyl-2-pentanone (MIBK)	ND		92	22	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Acetone	ND		92	22	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Benzene	ND		23	3.9	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Dichlorobromomethane	ND		23	5.6	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Bromoform	ND		23	21	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Bromomethane	ND		23	15	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Carbon disulfide	ND		23	9.9	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Carbon tetrachloride	ND		23	9.4	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Chlorobenzene	ND		23	3.2	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Chloroethane	ND		23	14	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Chloroform	ND		23	5.0	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Chloromethane	ND		23	6.1	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
cis-1,2-Dichloroethene	ND		23	3.7	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
cis-1,3-Dichloropropene	ND		23	11	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Cyclohexane	ND		46	15	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Chlorodibromomethane	ND		23	11	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Dichlorodifluoromethane	ND		23	4.9	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Ethylbenzene	ND		23	4.3	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Isopropylbenzene	ND		23	3.5	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Methyl acetate	ND		110	15	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Methyl tert-butyl ether	ND		23	3.4	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Methylcyclohexane	ND		46	6.1	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Methylene Chloride	ND		46	35	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Styrene	ND		23	4.8	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Tetrachloroethene	ND		23	8.9	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Toluene	ND		23	22	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
trans-1,2-Dichloroethene	ND		23	5.7	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
trans-1,3-Dichloropropene	ND		23	9.6	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Trichloroethene	ND		23	13	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Trichlorofluoromethane	ND		23	13	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100
Vinyl chloride	ND		0.23	0.11	mg/Kg	✳	02/21/23 13:30	02/24/23 00:53	1
Xylenes, Total	ND		46	8.4	mg/Kg	✳	02/21/23 13:30	02/24/23 13:12	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 00:53	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 13:12	100
Dibromofluoromethane (Surr)	87		41 - 138	02/21/23 13:30	02/24/23 00:53	1
Dibromofluoromethane (Surr)	80		41 - 138	02/21/23 13:30	02/24/23 13:12	100
4-Bromofluorobenzene (Surr)	98		41 - 143	02/21/23 13:30	02/24/23 00:53	1
4-Bromofluorobenzene (Surr)	74		41 - 143	02/21/23 13:30	02/24/23 13:12	100
1,2-Dichloroethane-d4 (Surr)	95		58 - 125	02/21/23 13:30	02/24/23 00:53	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/24/23 13:12	100

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.1	0.39	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4,5-Trichlorophenol	ND		3.4	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4,6-Trichlorophenol	ND		3.4	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4-Dichlorophenol	ND		3.4	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4-Dimethylphenol	ND		3.4	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4-Dinitrophenol	ND		7.5	3.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,4-Dinitrotoluene	ND		4.6	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2,6-Dinitrotoluene	ND		4.6	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Chloronaphthalene	ND		1.1	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Chlorophenol	ND		1.1	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Methylnaphthalene	3.3		0.34	0.045	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Methylphenol	ND		4.6	0.71	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Nitroaniline	ND		4.6	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
2-Nitrophenol	ND		1.1	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
3,3'-Dichlorobenzidine	ND		2.3	0.98	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
3-Nitroaniline	ND		4.6	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4,6-Dinitro-2-methylphenol	ND		7.5	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Bromophenyl phenyl ether	ND		1.1	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Chloro-3-methylphenol	ND		3.4	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Chloroaniline	ND		3.4	0.69	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Chlorophenyl phenyl ether	ND		1.1	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Nitroaniline	ND		4.6	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
4-Nitrophenol	ND		7.5	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Acenaphthene	0.13	J	0.34	0.065	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Acenaphthylene	0.10	J	0.34	0.092	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Acetophenone	ND		2.3	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Anthracene	0.18	J	0.34	0.055	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Atrazine	ND		4.6	0.82	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzaldehyde	ND		2.3	0.53	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzo[a]anthracene	0.50		0.34	0.078	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzo[a]pyrene	0.43		0.34	0.21	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzo[b]fluoranthene	0.84		0.34	0.15	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzo[g,h,i]perylene	0.25	J	0.34	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Benzo[k]fluoranthene	0.24	J	0.34	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Bis(2-chloroethoxy)methane	ND		2.3	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Bis(2-chloroethyl)ether	ND		2.3	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20
Butyl benzyl phthalate	ND		1.6	0.50	mg/Kg	☼	02/21/23 09:46	02/23/23 13:14	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.5	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Carbazole	ND		1.1	0.43	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Chrysene	0.59		0.34	0.034	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Dibenz(a,h)anthracene	ND		0.34	0.16	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Dibenzofuran	0.90	J	1.1	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Diethyl phthalate	ND		1.6	0.71	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Dimethyl phthalate	ND		1.6	0.32	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Di-n-octyl phthalate	ND		1.6	0.64	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Fluoranthene	0.93		0.34	0.10	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Fluorene	0.13	J	0.34	0.063	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Hexachlorobenzene	ND		0.34	0.065	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Hexachlorobutadiene	ND		1.1	0.27	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Hexachlorocyclopentadiene	ND		7.5	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Hexachloroethane	ND		1.1	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Indeno[1,2,3-cd]pyrene	ND		0.34	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Isophorone	ND		1.1	0.27	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
N-Nitrosodi-n-propylamine	ND		1.1	0.25	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
N-Nitrosodiphenylamine	ND		1.1	0.27	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Naphthalene	2.2		0.34	0.055	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Pentachlorophenol	ND		3.4	1.3	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Phenanthrene	1.7		0.34	0.051	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Phenol	ND		1.1	0.18	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
Pyrene	0.84		0.34	0.049	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20
3 & 4 Methylphenol	ND		9.2	0.66	mg/Kg	✳	02/21/23 09:46	02/23/23 13:14	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	53		46 - 137	02/21/23 09:46	02/23/23 13:14	20
Phenol-d5 (Surr)	44		26 - 120	02/21/23 09:46	02/23/23 13:14	20
Nitrobenzene-d5 (Surr)	48		25 - 120	02/21/23 09:46	02/23/23 13:14	20
2-Fluorophenol (Surr)	55		20 - 120	02/21/23 09:46	02/23/23 13:14	20
2-Fluorobiphenyl (Surr)	55		34 - 120	02/21/23 09:46	02/23/23 13:14	20
2,4,6-Tribromophenol (Surr)	88		10 - 120	02/21/23 09:46	02/23/23 13:14	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:12	1
Barium	0.27	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:12	1
Cadmium	0.0013	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:12	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:12	1
Lead	0.0080	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:12	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:12	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:52	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.3		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	13.7		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 19:54	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 19:54	1
2-Butanone (MEK)	0.015	J	0.25	0.0012	mg/L			02/20/23 19:54	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 19:54	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 19:54	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 19:54	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 19:54	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 19:54	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/20/23 19:54	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 19:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	94		80 - 120					02/20/23 19:54	1
<i>Dibromofluoromethane (Surr)</i>	101		71 - 121					02/20/23 19:54	1
<i>4-Bromofluorobenzene (Surr)</i>	111		80 - 120					02/20/23 19:54	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		76 - 120					02/20/23 19:54	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/21/23 08:07	02/23/23 14:40	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/21/23 08:07	02/23/23 14:40	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/21/23 08:07	02/23/23 14:40	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/21/23 08:07	02/23/23 14:40	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/21/23 08:07	02/23/23 14:40	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/21/23 08:07	02/23/23 14:40	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/21/23 08:07	02/23/23 14:40	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/21/23 08:07	02/23/23 14:40	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/21/23 08:07	02/23/23 14:40	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/21/23 08:07	02/23/23 14:40	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/21/23 08:07	02/23/23 14:40	1
Pyridine	ND		0.0040	0.00036	mg/L		02/21/23 08:07	02/23/23 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	115		46 - 137				02/21/23 08:07	02/23/23 14:40	1
<i>Phenol-d5 (Surr)</i>	62		26 - 120				02/21/23 08:07	02/23/23 14:40	1
<i>Nitrobenzene-d5 (Surr)</i>	72		24 - 120				02/21/23 08:07	02/23/23 14:40	1
<i>2-Fluorophenol (Surr)</i>	69		19 - 120				02/21/23 08:07	02/23/23 14:40	1
<i>2-Fluorobiphenyl (Surr)</i>	98		33 - 120				02/21/23 08:07	02/23/23 14:40	1
<i>2,4,6-Tribromophenol (Surr)</i>	106		10 - 120				02/21/23 08:07	02/23/23 14:40	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 11:32	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 11:32	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 11:32	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 11:32	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 11:32	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 11:32	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 11:32	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		10 - 145	02/21/23 08:09	02/22/23 11:32	1
DCB Decachlorobiphenyl	74		10 - 145	02/21/23 08:09	02/22/23 11:32	1
Tetrachloro-m-xylene	54		10 - 123	02/21/23 08:09	02/22/23 11:32	1
Tetrachloro-m-xylene	51		10 - 123	02/21/23 08:09	02/22/23 11:32	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 08:41	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 08:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136	02/21/23 20:16	02/22/23 08:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.3		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	17.7		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		59	30	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1221	ND		59	36	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1232	ND		59	25	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1242	ND		59	23	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1248	ND		59	20	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1254	ND		59	25	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1260	ND		59	25	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1262	ND		59	26	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Aroclor-1268	ND		59	19	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1
Polychlorinated biphenyls, Total	ND		59	36	ug/Kg	✳	02/20/23 08:20	02/21/23 01:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	63		10 - 149	02/20/23 08:20	02/21/23 01:31	1
DCB Decachlorobiphenyl	61		10 - 174	02/20/23 08:20	02/21/23 01:31	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	0.30	J	0.68	0.23	ng/g	✳	02/21/23 12:53	02/21/23 17:33	1
Perfluorooctanesulfonic acid	0.33	J	0.68	0.23	ng/g	✳	02/21/23 12:53	02/21/23 17:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	74		26 - 159	02/21/23 12:53	02/21/23 17:33	1
13C8 PFOS	84		41 - 154	02/21/23 12:53	02/21/23 17:33	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 76.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		21	6.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,1,2,2-Tetrachloroethane	ND		21	13	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		21	5.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,1,2-Trichloroethane	ND		21	4.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,1-Dichloroethane	ND		21	4.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,1-Dichloroethene	ND		21	6.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,2,4-Trichlorobenzene	ND		21	11	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,2-Dibromo-3-Chloropropane	ND		42	19	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Ethylene Dibromide	ND		21	6.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,2-Dichlorobenzene	ND		21	10	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,2-Dichloroethane	ND		21	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,2-Dichloropropane	ND		21	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,3-Dichlorobenzene	ND		21	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
1,4-Dichlorobenzene	ND		21	4.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
2-Butanone (MEK)	ND		85	13	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
2-Hexanone	ND		85	22	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
4-Methyl-2-pentanone (MIBK)	ND		85	20	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Acetone	ND		85	21	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Benzene	ND		21	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Dichlorobromomethane	ND		21	5.2	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Bromoform	ND		21	19	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Bromomethane	ND		21	14	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Carbon disulfide	ND		21	9.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Carbon tetrachloride	ND		21	8.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Chlorobenzene	ND		21	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Chloroethane	ND		21	13	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Chloroform	ND		21	4.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Chloromethane	ND		21	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
cis-1,2-Dichloroethene	ND		21	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
cis-1,3-Dichloropropene	ND		21	11	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Cyclohexane	ND		42	14	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Chlorodibromomethane	ND		21	9.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Dichlorodifluoromethane	ND		21	4.5	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Ethylbenzene	ND		21	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Isopropylbenzene	ND		21	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Methyl acetate	ND		110	14	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Methyl tert-butyl ether	ND		21	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Methylcyclohexane	ND		42	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Methylene Chloride	ND		42	32	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Styrene	ND		21	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Tetrachloroethene	ND		21	8.2	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Toluene	ND		21	20	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
trans-1,2-Dichloroethene	ND		21	5.3	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
trans-1,3-Dichloropropene	ND		21	8.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Trichloroethene	ND		21	12	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Trichlorofluoromethane	ND		21	12	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667
Vinyl chloride	ND		0.32	0.16	mg/Kg	✱	02/21/23 13:30	02/24/23 01:17	1
Xylenes, Total	ND		42	7.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:34	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 76.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 01:17	1
Toluene-d8 (Surr)	82		56 - 125	02/21/23 13:30	02/24/23 13:34	66.667
Dibromofluoromethane (Surr)	87		41 - 138	02/21/23 13:30	02/24/23 01:17	1
Dibromofluoromethane (Surr)	85		41 - 138	02/21/23 13:30	02/24/23 13:34	66.667
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/24/23 01:17	1
4-Bromofluorobenzene (Surr)	79		41 - 143	02/21/23 13:30	02/24/23 13:34	66.667
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	02/21/23 13:30	02/24/23 01:17	1
1,2-Dichloroethane-d4 (Surr)	81		58 - 125	02/21/23 13:30	02/24/23 13:34	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.44	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
bis (2-chloroisopropyl) ether	ND		2.6	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4,5-Trichlorophenol	ND		3.9	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4,6-Trichlorophenol	ND		3.9	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4-Dichlorophenol	ND		3.9	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4-Dimethylphenol	ND		3.9	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4-Dinitrophenol	ND		8.5	3.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,4-Dinitrotoluene	ND		5.2	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2,6-Dinitrotoluene	ND		5.2	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Chlorophenol	ND		1.3	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Methylnaphthalene	3.4		0.39	0.051	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Methylphenol	ND		5.2	0.80	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Nitroaniline	ND		5.2	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
2-Nitrophenol	ND		1.3	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
3,3'-Dichlorobenzidine	ND		2.6	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
3-Nitroaniline	ND		5.2	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4,6-Dinitro-2-methylphenol	ND		8.5	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Chloro-3-methylphenol	ND		3.9	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Chloroaniline	ND		3.9	0.78	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Nitroaniline	ND		5.2	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
4-Nitrophenol	ND		8.5	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Acenaphthene	0.33	J	0.39	0.074	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Acenaphthylene	0.16	J	0.39	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Acetophenone	ND		2.6	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Anthracene	0.40		0.39	0.062	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Atrazine	ND		5.2	0.93	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzaldehyde	ND		2.6	0.59	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzo[a]anthracene	0.83		0.39	0.088	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzo[a]pyrene	0.56		0.39	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzo[b]fluoranthene	1.2		0.39	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzo[g,h,i]perylene	0.27	J	0.39	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Benzo[k]fluoranthene	0.46		0.39	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Bis(2-chloroethoxy)methane	ND		2.6	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Bis(2-chloroethyl)ether	ND		2.6	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20
Butyl benzyl phthalate	ND		1.8	0.57	mg/Kg	☼	02/21/23 09:46	02/23/23 13:39	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 76.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.5	1.9	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Carbazole	ND		1.3	0.49	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Chrysene	1.3		0.39	0.039	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Dibenz(a,h)anthracene	ND		0.39	0.18	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Dibenzofuran	1.1	J	1.3	0.34	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Diethyl phthalate	ND		1.8	0.80	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Dimethyl phthalate	ND		1.8	0.36	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Di-n-octyl phthalate	ND		1.8	0.72	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Fluoranthene	2.0		0.39	0.12	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Fluorene	0.29	J	0.39	0.071	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Hexachlorobenzene	ND		0.39	0.074	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Hexachlorobutadiene	ND		1.3	0.31	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Hexachlorocyclopentadiene	ND		8.5	1.6	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Indeno[1,2,3-cd]pyrene	0.20	J	0.39	0.19	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Isophorone	ND		1.3	0.31	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
N-Nitrosodiphenylamine	ND		1.3	0.31	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Naphthalene	2.4		0.39	0.062	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Nitrobenzene	ND		2.6	0.34	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Pentachlorophenol	ND		3.9	1.5	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Phenanthrene	2.2		0.39	0.058	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Phenol	ND		1.3	0.21	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
Pyrene	1.6		0.39	0.055	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20
3 & 4 Methylphenol	ND		10	0.75	mg/Kg	☆	02/21/23 09:46	02/23/23 13:39	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	74		46 - 137	02/21/23 09:46	02/23/23 13:39	20
Phenol-d5 (Surr)	54		26 - 120	02/21/23 09:46	02/23/23 13:39	20
Nitrobenzene-d5 (Surr)	70		25 - 120	02/21/23 09:46	02/23/23 13:39	20
2-Fluorophenol (Surr)	71		20 - 120	02/21/23 09:46	02/23/23 13:39	20
2-Fluorobiphenyl (Surr)	73		34 - 120	02/21/23 09:46	02/23/23 13:39	20
2,4,6-Tribromophenol (Surr)	95		10 - 120	02/21/23 09:46	02/23/23 13:39	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:16	1
Barium	0.27	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:16	1
Cadmium	0.00089	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:16	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:16	1
Lead	0.0074	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:16	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:16	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:16	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:59	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 76.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.5		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	23.5		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		18	5.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,1,2,2-Tetrachloroethane	ND		18	11	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		18	4.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,1,2-Trichloroethane	ND		18	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,1-Dichloroethane	ND		18	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,1-Dichloroethene	ND		18	6.0	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,2,4-Trichlorobenzene	ND		18	9.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,2-Dibromo-3-Chloropropane	ND		36	16	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Ethylene Dibromide	ND		18	5.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,2-Dichlorobenzene	ND		18	8.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,2-Dichloroethane	ND		18	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,2-Dichloropropane	ND		18	2.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,3-Dichlorobenzene	ND		18	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
1,4-Dichlorobenzene	ND		18	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
2-Butanone (MEK)	ND		73	11	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
2-Hexanone	ND		73	19	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
4-Methyl-2-pentanone (MIBK)	ND		73	17	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Acetone	ND		73	18	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Benzene	ND		18	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Dichlorobromomethane	ND		18	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Bromoform	ND		18	17	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Bromomethane	ND		18	12	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Carbon disulfide	ND		18	7.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Carbon tetrachloride	ND		18	7.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Chlorobenzene	ND		18	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Chloroethane	ND		18	11	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Chloroform	ND		18	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Chloromethane	ND		18	4.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
cis-1,2-Dichloroethene	ND		18	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
cis-1,3-Dichloropropene	ND		18	9.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Cyclohexane	ND		36	12	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Chlorodibromomethane	ND		18	8.5	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Dichlorodifluoromethane	ND		18	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Ethylbenzene	ND		18	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Isopropylbenzene	ND		18	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Methyl acetate	ND		91	12	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Methyl tert-butyl ether	ND		18	2.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Methylcyclohexane	ND		36	4.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Methylene Chloride	ND		36	28	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Styrene	ND		18	3.8	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Tetrachloroethene	ND		18	7.1	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Toluene	ND		18	18	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
trans-1,2-Dichloroethene	ND		18	4.5	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
trans-1,3-Dichloropropene	ND		18	7.7	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Trichloroethene	ND		18	10	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Trichlorofluoromethane	ND		18	10	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667
Vinyl chloride	ND		0.27	0.13	mg/Kg	✱	02/21/23 13:30	02/24/23 01:41	1
Xylenes, Total	ND		36	6.6	mg/Kg	✱	02/21/23 13:30	02/24/23 13:55	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 01:41	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 13:55	66.667
Dibromofluoromethane (Surr)	87		41 - 138	02/21/23 13:30	02/24/23 01:41	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/24/23 13:55	66.667
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/24/23 01:41	1
4-Bromofluorobenzene (Surr)	73		41 - 143	02/21/23 13:30	02/24/23 13:55	66.667
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	02/21/23 13:30	02/24/23 01:41	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125	02/21/23 13:30	02/24/23 13:55	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4-Dimethylphenol	ND		3.7	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4-Dinitrophenol	ND		8.2	3.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,4-Dinitrotoluene	ND		5.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Methylnaphthalene	3.0		0.37	0.049	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Methylphenol	ND		5.0	0.77	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Nitroaniline	ND		5.0	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4,6-Dinitro-2-methylphenol	ND		8.2	2.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Chloroaniline	ND		3.7	0.75	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
4-Nitrophenol	ND		8.2	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Acenaphthene	ND		0.37	0.071	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Acenaphthylene	ND		0.37	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Acetophenone	ND		2.5	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Anthracene	0.15 J		0.37	0.060	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Atrazine	ND		5.0	0.90	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzo[a]anthracene	0.45		0.37	0.085	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzo[a]pyrene	0.38		0.37	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzo[b]fluoranthene	0.75		0.37	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzo[g,h,i]perylene	0.18 J		0.37	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Benzo[k]fluoranthene	0.23 J		0.37	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20
Butyl benzyl phthalate	ND		1.7	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 14:05	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.2	1.9	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Carbazole	ND		1.2	0.47	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Chrysene	0.53		0.37	0.037	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Dibenzofuran	0.84	J	1.2	0.32	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Diethyl phthalate	ND		1.7	0.77	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Di-n-butyl phthalate	ND		1.7	1.3	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Di-n-octyl phthalate	ND		1.7	0.70	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Fluoranthene	0.86		0.37	0.11	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Fluorene	0.11	J	0.37	0.068	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Hexachlorobenzene	ND		0.37	0.071	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Hexachlorocyclopentadiene	ND		8.2	1.5	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Indeno[1,2,3-cd]pyrene	ND		0.37	0.18	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Isophorone	ND		1.2	0.30	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Naphthalene	2.0		0.37	0.060	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Phenanthrene	1.6		0.37	0.056	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Phenol	ND		1.2	0.20	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
Pyrene	0.74		0.37	0.053	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20
3 & 4 Methylphenol	ND		10	0.72	mg/Kg	✱	02/21/23 09:46	02/23/23 14:05	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	54		46 - 137	02/21/23 09:46	02/23/23 14:05	20
Phenol-d5 (Surr)	32		26 - 120	02/21/23 09:46	02/23/23 14:05	20
Nitrobenzene-d5 (Surr)	39		25 - 120	02/21/23 09:46	02/23/23 14:05	20
2-Fluorophenol (Surr)	49		20 - 120	02/21/23 09:46	02/23/23 14:05	20
2-Fluorobiphenyl (Surr)	53		34 - 120	02/21/23 09:46	02/23/23 14:05	20
2,4,6-Tribromophenol (Surr)	83		10 - 120	02/21/23 09:46	02/23/23 14:05	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:21	1
Barium	0.31	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:21	1
Cadmium	0.0011	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:21	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:21	1
Lead	0.0090	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:21	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:21	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:21	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:01	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.7		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	20.3		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		16	5.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,1,2,2-Tetrachloroethane	ND		16	9.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		16	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,1,2-Trichloroethane	ND		16	3.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,1-Dichloroethane	ND		16	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,1-Dichloroethene	ND		16	5.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,2,4-Trichlorobenzene	ND		16	8.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,2-Dibromo-3-Chloropropane	ND		33	15	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Ethylene Dibromide	ND		16	5.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,2-Dichlorobenzene	ND		16	7.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,2-Dichloroethane	ND		16	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,2-Dichloropropane	ND		16	2.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,3-Dichlorobenzene	ND		16	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
1,4-Dichlorobenzene	ND		16	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
2-Butanone (MEK)	ND		66	10	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
2-Hexanone	ND		66	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
4-Methyl-2-pentanone (MIBK)	ND		66	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Acetone	ND		66	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Benzene	ND		16	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Dichlorobromomethane	ND		16	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Bromoform	ND		16	15	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Bromomethane	ND		16	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Carbon disulfide	ND		16	7.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Carbon tetrachloride	ND		16	6.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Chlorobenzene	ND		16	2.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Chloroethane	ND		16	9.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Chloroform	ND		16	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Chloromethane	ND		16	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
cis-1,2-Dichloroethene	ND		16	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
cis-1,3-Dichloropropene	ND		16	8.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Cyclohexane	ND		33	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Chlorodibromomethane	ND		16	7.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Dichlorodifluoromethane	ND		16	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Ethylbenzene	ND		16	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Isopropylbenzene	ND		16	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Methyl acetate	ND		82	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Methyl tert-butyl ether	ND		16	2.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Methylcyclohexane	ND		33	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Methylene Chloride	ND		33	25	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Styrene	ND		16	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Tetrachloroethene	ND		16	6.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Toluene	ND		16	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
trans-1,2-Dichloroethene	ND		16	4.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
trans-1,3-Dichloropropene	ND		16	6.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Trichloroethene	ND		16	9.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Trichlorofluoromethane	ND		16	9.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667
Vinyl chloride	0.24	J	0.25	0.12	mg/Kg	✱	02/21/23 13:30	02/24/23 02:06	1
Xylenes, Total	ND		33	6.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:16	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 02:06	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 14:16	66.667
Dibromofluoromethane (Surr)	85		41 - 138	02/21/23 13:30	02/24/23 02:06	1
Dibromofluoromethane (Surr)	83		41 - 138	02/21/23 13:30	02/24/23 14:16	66.667
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/24/23 02:06	1
4-Bromofluorobenzene (Surr)	74		41 - 143	02/21/23 13:30	02/24/23 14:16	66.667
1,2-Dichloroethane-d4 (Surr)	91		58 - 125	02/21/23 13:30	02/24/23 02:06	1
1,2-Dichloroethane-d4 (Surr)	79		58 - 125	02/21/23 13:30	02/24/23 14:16	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4,5-Trichlorophenol	ND		3.6	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4,6-Trichlorophenol	ND		3.6	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4-Dichlorophenol	ND		3.6	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4-Dimethylphenol	ND		3.6	0.95	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4-Dinitrophenol	ND		7.8	3.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Methylnaphthalene	2.6		0.36	0.046	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Nitroaniline	ND		4.7	0.95	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
3,3'-Dichlorobenzidine	ND		2.4	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4,6-Dinitro-2-methylphenol	ND		7.8	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Chloro-3-methylphenol	ND		3.6	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Chloroaniline	ND		3.6	0.71	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
4-Nitrophenol	ND		7.8	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Acenaphthene	0.16	J	0.36	0.068	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Acenaphthylene	0.11	J	0.36	0.095	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Acetophenone	ND		2.4	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Anthracene	0.23	J	0.36	0.057	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Atrazine	ND		4.7	0.85	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzaldehyde	ND		2.4	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzo[a]anthracene	0.58		0.36	0.081	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzo[a]pyrene	0.47		0.36	0.22	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzo[b]fluoranthene	0.97		0.36	0.15	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzo[g,h,i]perylene	0.18	J	0.36	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Benzo[k]fluoranthene	0.27	J	0.36	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Bis(2-chloroethoxy)methane	ND		2.4	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Bis(2-chloroethyl)ether	ND		2.4	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20
Butyl benzyl phthalate	ND		1.7	0.52	mg/Kg	☼	02/21/23 09:46	02/23/23 14:31	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.8	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Carbazole	ND		1.2	0.45	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Chrysene	0.70		0.36	0.035	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Dibenz(a,h)anthracene	ND		0.36	0.16	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Dibenzofuran	0.78 J		1.2	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Diethyl phthalate	ND		1.7	0.73	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Dimethyl phthalate	ND		1.7	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Di-n-octyl phthalate	ND		1.7	0.66	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Fluoranthene	1.3		0.36	0.11	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Fluorene	0.18 J		0.36	0.065	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Hexachlorobenzene	ND		0.36	0.068	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Hexachlorocyclopentadiene	ND		7.8	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Indeno[1,2,3-cd]pyrene	ND		0.36	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Isophorone	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Naphthalene	1.7		0.36	0.057	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Nitrobenzene	ND		2.4	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Pentachlorophenol	ND		3.6	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Phenanthrene	1.6		0.36	0.053	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Phenol	ND		1.2	0.19	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
Pyrene	1.1		0.36	0.051	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20
3 & 4 Methylphenol	ND		9.5	0.69	mg/Kg	✳	02/21/23 09:46	02/23/23 14:31	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	59		46 - 137	02/21/23 09:46	02/23/23 14:31	20
Phenol-d5 (Surr)	39		26 - 120	02/21/23 09:46	02/23/23 14:31	20
Nitrobenzene-d5 (Surr)	53		25 - 120	02/21/23 09:46	02/23/23 14:31	20
2-Fluorophenol (Surr)	55		20 - 120	02/21/23 09:46	02/23/23 14:31	20
2-Fluorobiphenyl (Surr)	60		34 - 120	02/21/23 09:46	02/23/23 14:31	20
2,4,6-Tribromophenol (Surr)	86		10 - 120	02/21/23 09:46	02/23/23 14:31	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:25	1
Barium	0.32 J B		0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:25	1
Cadmium	0.00097 J B		0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:25	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:25	1
Lead	0.0076 J		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:25	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:25	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:03	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	15.2		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Date Collected: 02/18/23 17:20

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		18	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,1,2,2-Tetrachloroethane	ND		18	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		18	4.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,1,2-Trichloroethane	ND		18	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,1-Dichloroethane	ND		18	3.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,1-Dichloroethene	ND		18	5.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,2,4-Trichlorobenzene	ND		18	9.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,2-Dibromo-3-Chloropropane	ND		35	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Ethylene Dibromide	ND		18	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,2-Dichlorobenzene	ND		18	8.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,2-Dichloroethane	ND		18	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,2-Dichloropropane	ND		18	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,3-Dichlorobenzene	ND		18	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
1,4-Dichlorobenzene	ND		18	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
2-Butanone (MEK)	ND		71	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
2-Hexanone	ND		71	19	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
4-Methyl-2-pentanone (MIBK)	ND		71	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Acetone	ND		71	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Benzene	ND		18	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Dichlorobromomethane	ND		18	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Bromoform	ND		18	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Bromomethane	ND		18	12	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Carbon disulfide	ND		18	7.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Carbon tetrachloride	ND		18	7.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Chlorobenzene	ND		18	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Chloroethane	ND		18	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Chloroform	ND		18	3.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Chloromethane	ND		18	4.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
cis-1,2-Dichloroethene	ND		18	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
cis-1,3-Dichloropropene	ND		18	8.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Cyclohexane	ND		35	12	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Chlorodibromomethane	ND		18	8.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Dichlorodifluoromethane	ND		18	3.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Ethylbenzene	ND		18	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Isopropylbenzene	ND		18	2.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Methyl acetate	ND		89	12	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Methyl tert-butyl ether	ND		18	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Methylcyclohexane	ND		35	4.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Methylene Chloride	ND		35	27	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Styrene	ND		18	3.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Tetrachloroethene	ND		18	6.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Toluene	ND		18	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
trans-1,2-Dichloroethene	ND		18	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
trans-1,3-Dichloropropene	ND		18	7.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Trichloroethene	ND		18	10	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Trichlorofluoromethane	ND		18	9.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667
Vinyl chloride	ND		0.27	0.13	mg/Kg	✱	02/21/23 13:30	02/24/23 02:30	1
Xylenes, Total	ND		35	6.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:38	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Date Collected: 02/18/23 17:20

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/24/23 02:30	1
Toluene-d8 (Surr)	78		56 - 125	02/21/23 13:30	02/24/23 14:38	66.667
Dibromofluoromethane (Surr)	87		41 - 138	02/21/23 13:30	02/24/23 02:30	1
Dibromofluoromethane (Surr)	82		41 - 138	02/21/23 13:30	02/24/23 14:38	66.667
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/24/23 02:30	1
4-Bromofluorobenzene (Surr)	73		41 - 143	02/21/23 13:30	02/24/23 14:38	66.667
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/21/23 13:30	02/24/23 02:30	1
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	02/21/23 13:30	02/24/23 14:38	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4-Dimethylphenol	ND		3.7	0.98	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4-Dinitrophenol	ND		8.1	3.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,4-Dinitrotoluene	ND		4.9	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2,6-Dinitrotoluene	ND		4.9	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Chloronaphthalene	ND		1.2	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Methylnaphthalene	2.5		0.37	0.048	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Methylphenol	ND		4.9	0.76	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Nitroaniline	ND		4.9	0.98	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
3,3'-Dichlorobenzidine	ND		2.4	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
3-Nitroaniline	ND		4.9	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4,6-Dinitro-2-methylphenol	ND		8.1	2.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Bromophenyl phenyl ether	ND		1.2	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Chloroaniline	ND		3.7	0.73	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Chlorophenyl phenyl ether	ND		1.2	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Nitroaniline	ND		4.9	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
4-Nitrophenol	ND		8.1	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Acenaphthene	0.093	J	0.37	0.070	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Acenaphthylene	ND		0.37	0.098	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Acetophenone	ND		2.4	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Anthracene	0.16	J	0.37	0.059	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Atrazine	ND		4.9	0.88	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzaldehyde	ND		2.4	0.56	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzo[a]anthracene	0.48		0.37	0.083	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzo[a]pyrene	0.34	J	0.37	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzo[b]fluoranthene	0.75		0.37	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzo[g,h,i]perylene	ND		0.37	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Benzo[k]fluoranthene	0.18	J	0.37	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Bis(2-chloroethoxy)methane	ND		2.4	0.29	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Bis(2-chloroethyl)ether	ND		2.4	0.29	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20
Butyl benzyl phthalate	ND		1.7	0.54	mg/Kg	☼	02/21/23 09:46	02/23/23 14:57	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Date Collected: 02/18/23 17:20

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.1	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Carbazole	ND		1.2	0.46	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Chrysene	0.59		0.37	0.036	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Dibenzofuran	0.70	J	1.2	0.32	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Diethyl phthalate	ND		1.7	0.76	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Dimethyl phthalate	ND		1.7	0.34	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Di-n-butyl phthalate	ND		1.7	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Di-n-octyl phthalate	ND		1.7	0.68	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Fluoranthene	0.81		0.37	0.11	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Fluorene	0.094	J	0.37	0.067	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Hexachlorobenzene	ND		0.37	0.070	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Hexachlorobutadiene	ND		1.2	0.29	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Hexachlorocyclopentadiene	ND		8.1	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Indeno[1,2,3-cd]pyrene	ND		0.37	0.18	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Isophorone	ND		1.2	0.29	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
N-Nitrosodiphenylamine	ND		1.2	0.29	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Naphthalene	1.7		0.37	0.059	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Nitrobenzene	ND		2.4	0.32	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Phenanthrene	1.4		0.37	0.055	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Phenol	ND		1.2	0.20	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
Pyrene	0.72		0.37	0.052	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20
3 & 4 Methylphenol	ND		9.8	0.71	mg/Kg	✳	02/21/23 09:46	02/23/23 14:57	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	68		46 - 137	02/21/23 09:46	02/23/23 14:57	20
Phenol-d5 (Surr)	54		26 - 120	02/21/23 09:46	02/23/23 14:57	20
Nitrobenzene-d5 (Surr)	55		25 - 120	02/21/23 09:46	02/23/23 14:57	20
2-Fluorophenol (Surr)	60		20 - 120	02/21/23 09:46	02/23/23 14:57	20
2-Fluorobiphenyl (Surr)	66		34 - 120	02/21/23 09:46	02/23/23 14:57	20
2,4,6-Tribromophenol (Surr)	93		10 - 120	02/21/23 09:46	02/23/23 14:57	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:29	1
Barium	0.23	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:29	1
Cadmium	0.0013	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:29	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:29	1
Lead	0.0096	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:29	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:29	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:29	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Date Collected: 02/18/23 17:20

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.2		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	17.8		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-10 (3-4)

Lab Sample ID: 240-180646-11

Date Collected: 02/18/23 17:28

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		17	5.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,1,2,2-Tetrachloroethane	ND		17	10	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		17	4.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,1,2-Trichloroethane	ND		17	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,1-Dichloroethane	ND		17	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,1-Dichloroethene	ND		17	5.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,2,4-Trichlorobenzene	ND		17	9.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,2-Dibromo-3-Chloropropane	ND		35	15	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Ethylene Dibromide	ND		17	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,2-Dichlorobenzene	ND		17	8.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,2-Dichloroethane	ND		17	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,2-Dichloropropane	ND		17	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,3-Dichlorobenzene	ND		17	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
1,4-Dichlorobenzene	ND		17	3.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
2-Butanone (MEK)	ND		69	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
2-Hexanone	ND		69	18	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
4-Methyl-2-pentanone (MIBK)	ND		69	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Acetone	ND		69	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Benzene	ND		17	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Dichlorobromomethane	ND		17	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Bromoform	ND		17	16	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Bromomethane	ND		17	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Carbon disulfide	ND		17	7.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Carbon tetrachloride	ND		17	7.0	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Chlorobenzene	ND		17	2.4	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Chloroethane	ND		17	10	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Chloroform	ND		17	3.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Chloromethane	ND		17	4.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
cis-1,2-Dichloroethene	ND		17	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
cis-1,3-Dichloropropene	ND		17	8.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Cyclohexane	ND		35	11	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Chlorodibromomethane	ND		17	8.1	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Dichlorodifluoromethane	ND		17	3.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Ethylbenzene	ND		17	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Isopropylbenzene	ND		17	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Methyl acetate	ND		86	12	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Methyl tert-butyl ether	ND		17	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Methylcyclohexane	ND		35	4.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Methylene Chloride	ND		35	26	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Styrene	ND		17	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Tetrachloroethene	ND		17	6.7	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Toluene	ND		17	17	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
trans-1,2-Dichloroethene	ND		17	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
trans-1,3-Dichloropropene	ND		17	7.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Trichloroethene	ND		17	9.9	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Trichlorofluoromethane	ND		17	9.5	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667
Vinyl chloride	ND		0.26	0.13	mg/Kg	✱	02/21/23 13:30	02/24/23 02:54	1
Xylenes, Total	ND		35	6.3	mg/Kg	✱	02/21/23 13:30	02/24/23 14:59	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-10 (3-4)

Lab Sample ID: 240-180646-11

Date Collected: 02/18/23 17:28

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/21/23 13:30	02/24/23 02:54	1
Toluene-d8 (Surr)	76		56 - 125	02/21/23 13:30	02/24/23 14:59	66.667
Dibromofluoromethane (Surr)	88		41 - 138	02/21/23 13:30	02/24/23 02:54	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/24/23 14:59	66.667
4-Bromofluorobenzene (Surr)	98		41 - 143	02/21/23 13:30	02/24/23 02:54	1
4-Bromofluorobenzene (Surr)	73		41 - 143	02/21/23 13:30	02/24/23 14:59	66.667
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	02/21/23 13:30	02/24/23 02:54	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/24/23 14:59	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
bis (2-chloroisopropyl) ether	ND		2.4	0.24	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4-Dinitrophenol	ND		7.8	3.3	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Chlorophenol	ND		1.2	0.24	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Methylnaphthalene	3.2		0.35	0.046	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Nitroaniline	ND		4.7	0.94	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
3,3'-Dichlorobenzidine	ND		2.4	1.0	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4,6-Dinitro-2-methylphenol	ND		7.8	1.9	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Chloroaniline	ND		3.5	0.71	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
4-Nitrophenol	ND		7.8	2.2	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Acenaphthene	0.18	J	0.35	0.067	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Acenaphthylene	0.11	J	0.35	0.094	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Acetophenone	ND		2.4	0.26	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Anthracene	0.22	J	0.35	0.057	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Atrazine	ND		4.7	0.85	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzaldehyde	ND		2.4	0.54	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzo[a]anthracene	0.62		0.35	0.080	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzo[a]pyrene	0.41		0.35	0.22	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzo[b]fluoranthene	0.89		0.35	0.15	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzo[g,h,i]perylene	ND		0.35	0.17	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Benzo[k]fluoranthene	0.31	J	0.35	0.16	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Bis(2-chloroethoxy)methane	ND		2.4	0.28	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Bis(2-chloroethyl)ether	ND		2.4	0.28	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg	✱	02/21/23 09:46	02/23/23 15:23	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-10 (3-4)

Lab Sample ID: 240-180646-11

Date Collected: 02/18/23 17:28

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.8	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Carbazole	ND		1.2	0.45	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Chrysene	0.65		0.35	0.035	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Dibenzofuran	0.95	J	1.2	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Diethyl phthalate	ND		1.6	0.73	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Fluoranthene	1.2		0.35	0.10	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Fluorene	0.16	J	0.35	0.064	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Hexachlorocyclopentadiene	ND		7.8	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Indeno[1,2,3-cd]pyrene	ND		0.35	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Isophorone	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Naphthalene	2.2		0.35	0.057	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Nitrobenzene	ND		2.4	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Phenanthrene	1.8		0.35	0.052	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Phenol	ND		1.2	0.19	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
Pyrene	1.0		0.35	0.050	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg	✳	02/21/23 09:46	02/23/23 15:23	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	70		46 - 137	02/21/23 09:46	02/23/23 15:23	20
Phenol-d5 (Surr)	39		26 - 120	02/21/23 09:46	02/23/23 15:23	20
Nitrobenzene-d5 (Surr)	55		25 - 120	02/21/23 09:46	02/23/23 15:23	20
2-Fluorophenol (Surr)	68		20 - 120	02/21/23 09:46	02/23/23 15:23	20
2-Fluorobiphenyl (Surr)	68		34 - 120	02/21/23 09:46	02/23/23 15:23	20
2,4,6-Tribromophenol (Surr)	91		10 - 120	02/21/23 09:46	02/23/23 15:23	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:42	1
Barium	0.30	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:42	1
Cadmium	0.0013	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:42	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:42	1
Lead	0.0087	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:42	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:42	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:42	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:07	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-10 (3-4)

Lab Sample ID: 240-180646-11

Date Collected: 02/18/23 17:28

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.1		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	14.9		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 20:17	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 20:17	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/20/23 20:17	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 20:17	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 20:17	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 20:17	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 20:17	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 20:17	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/20/23 20:17	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		02/20/23 20:17	1
Dibromofluoromethane (Surr)	101		71 - 121		02/20/23 20:17	1
4-Bromofluorobenzene (Surr)	115		80 - 120		02/20/23 20:17	1
1,2-Dichloroethane-d4 (Surr)	94		76 - 120		02/20/23 20:17	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00084	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
2,4,5-Trichlorophenol	ND		0.010	0.0050	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
2,4,6-Trichlorophenol	ND		0.010	0.0045	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
2,4-Dinitrotoluene	ND		0.010	0.0052	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Hexachlorobenzene	ND		0.0020	0.00040	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Hexachlorobutadiene	ND		0.010	0.0014	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Hexachloroethane	ND		0.010	0.00099	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
2-Methylphenol	ND		0.010	0.00052	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
3 & 4 Methylphenol	ND		0.010	0.00048	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Nitrobenzene	ND		0.010	0.0013	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Pentachlorophenol	ND		0.040	0.0078	mg/L		02/21/23 08:07	02/23/23 15:52	2.5
Pyridine	ND		0.010	0.00090	mg/L		02/21/23 08:07	02/23/23 15:52	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	123		46 - 137	02/21/23 08:07	02/23/23 15:52	2.5
Phenol-d5 (Surr)	70		26 - 120	02/21/23 08:07	02/23/23 15:52	2.5
Nitrobenzene-d5 (Surr)	77		24 - 120	02/21/23 08:07	02/23/23 15:52	2.5
2-Fluorophenol (Surr)	78		19 - 120	02/21/23 08:07	02/23/23 15:52	2.5
2-Fluorobiphenyl (Surr)	105		33 - 120	02/21/23 08:07	02/23/23 15:52	2.5
2,4,6-Tribromophenol (Surr)	112		10 - 120	02/21/23 08:07	02/23/23 15:52	2.5

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 11:44	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 11:44	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 11:44	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 11:44	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 11:44	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 11:44	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 11:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	57		10 - 145	02/21/23 08:09	02/22/23 11:44	1
DCB Decachlorobiphenyl	58		10 - 145	02/21/23 08:09	02/22/23 11:44	1
Tetrachloro-m-xylene	47		10 - 123	02/21/23 08:09	02/22/23 11:44	1
Tetrachloro-m-xylene	44		10 - 123	02/21/23 08:09	02/22/23 11:44	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 09:09	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 09:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136	02/21/23 20:16	02/22/23 09:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.9		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	19.1		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 80.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		62	31	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1221	ND		62	37	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1232	ND		62	26	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1242	ND		62	23	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1248	ND		62	21	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1254	ND		62	26	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1260	ND		62	26	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1262	ND		62	27	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Aroclor-1268	ND		62	20	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1
Polychlorinated biphenyls, Total	ND		62	37	ug/Kg	✳	02/20/23 08:20	02/21/23 01:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	63		10 - 149	02/20/23 08:20	02/21/23 01:47	1
DCB Decachlorobiphenyl	70		10 - 174	02/20/23 08:20	02/21/23 01:47	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	0.27	J	0.71	0.24	ng/g	✳	02/21/23 12:53	02/21/23 17:44	1
Perfluorooctanesulfonic acid	0.30	J	0.71	0.24	ng/g	✳	02/21/23 12:53	02/21/23 17:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	69		26 - 159	02/21/23 12:53	02/21/23 17:44	1
13C8 PFOS	82		41 - 154	02/21/23 12:53	02/21/23 17:44	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180646-1	WC-WS2-01 (1-1.5)	106	87	99	97
240-180646-1	WC-WS2-01 (1-1.5)	78	79	74	76
240-180646-2	WC-WS2-02 (1-2)	104	84	98	92
240-180646-2	WC-WS2-02 (1-2)	78	83	75	80
240-180646-3	WC-WS2-03 (2-3)	105	85	96	92
240-180646-3	WC-WS2-03 (2-3)	80	81	75	79
240-180646-3 MS	WC-WS2-03 (2-3)	105	88	97	94
240-180646-3 MSD	WC-WS2-03 (2-3)	107	84	96	91
240-180646-4	WC-WS2-04 (3-4)	77	79	74	78
240-180646-4	WC-WS2-04 (3-4)	105	88	96	94
240-180646-5	WC-WS2-05 (2-3)	105	87	98	95
240-180646-5	WC-WS2-05 (2-3)	77	80	74	78
240-180646-7	WC-WS2-06 (3-4)	105	87	96	93
240-180646-7	WC-WS2-06 (3-4)	82	85	79	81
240-180646-8	WC-WS2-07 (2-3)	105	87	96	93
240-180646-8	WC-WS2-07 (2-3)	77	79	73	75
240-180646-9	WC-WS2-08 (4-5)	105	85	96	91
240-180646-9	WC-WS2-08 (4-5)	77	83	74	79
240-180646-10	WC-WS2-09 (5-6)	105	87	97	92
240-180646-10	WC-WS2-09 (5-6)	78	82	73	80
240-180646-11	WC-WS2-10 (3-4)	108	88	98	94
240-180646-11	WC-WS2-10 (3-4)	76	79	73	78
LCS 240-562783/2-A	Lab Control Sample	101	86	96	97
LCS 240-562918/2-A	Lab Control Sample	101	90	101	97
LCS 240-562918/2-A	Lab Control Sample	81	80	75	75
LCS 240-562918/2-A	Lab Control Sample	101	88	96	98
MB 240-562783/1-A	Method Blank	100	88	97	97
MB 240-562918/1-A	Method Blank	102	89	99	95
MB 240-562918/1-A	Method Blank	85	79	75	78
MB 240-562918/1-A	Method Blank	99	86	97	97

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-562664/20	Lab Control Sample	96	107	111	100

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180646-6	WC-WS2-COMP (01-07)	94	101	111	93
240-180646-12	WC-WS2-COMP (08-14)	97	101	115	94
LB 240-562615/1-A MB	Method Blank	95	105	108	102

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180646-1	WC-WS2-01 (1-1.5)	100	0 S1-	61	76	92	127 S1+
240-180646-2	WC-WS2-02 (1-2)	82	0 S1-	48	59	72	132 S1+
240-180646-3	WC-WS2-03 (2-3)	69	53	48	59	65	85
240-180646-3 MS	WC-WS2-03 (2-3)	64	53	63	61	66	92
240-180646-3 MSD	WC-WS2-03 (2-3)	67	49	67	61	72	90
240-180646-4	WC-WS2-04 (3-4)	75	55	68	77	72	0 S1-
240-180646-5	WC-WS2-05 (2-3)	53	44	48	55	55	88
240-180646-7	WC-WS2-06 (3-4)	74	54	70	71	73	95
240-180646-8	WC-WS2-07 (2-3)	54	32	39	49	53	83
240-180646-9	WC-WS2-08 (4-5)	59	39	53	55	60	86
240-180646-10	WC-WS2-09 (5-6)	68	54	55	60	66	93
240-180646-11	WC-WS2-10 (3-4)	70	39	55	68	68	91
LCS 240-562719/25-A	Lab Control Sample	128	59	57	54	85	41
LCS 240-562719/26-A	Lab Control Sample	132	64	61	56	88	43
LCS 240-562719/2-A	Lab Control Sample	110	74	62	75	92	107
LCS 240-562873/2-A	Lab Control Sample	107	90	85	81	92	85
LCS 240-562873/3-A	Lab Control Sample	111	81	69	67	79	51
LCS 240-562873/4-A	Lab Control Sample	111	82	69	71	79	60
MB 240-562719/1-A	Method Blank	112	56	56	51	81	45
MB 240-562873/1-A	Method Blank	118	93	82	75	91	53

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-562821/10-A	Lab Control Sample	105	60	67	67	91	99

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
MB 240-562821/9-A	Method Blank	119	59	74	71	97	97

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180646-6	WC-WS2-COMP (01-07)	115	62	72	69	98	106
240-180646-6 MS	WC-WS2-COMP (01-07)	116	75	79	83	104	113
240-180646-12	WC-WS2-COMP (08-14)	123	70	77	78	105	112

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-562822/7-A	Lab Control Sample	90	90	71	69
MB 240-562822/6-A	Method Blank	92	92	69	67

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180646-6	WC-WS2-COMP (01-07)	74	71	51	54
240-180646-12	WC-WS2-COMP (08-14)	58	57	44	47
240-180646-12 MS	WC-WS2-COMP (08-14)	88	89	61	65

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine
TCX = Tetrachloro-m-xylene

Job ID: 240-180646-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-180646-6	WC-WS2-COMP (01-07)	63	61
240-180646-12	WC-WS2-COMP (08-14)	63	70
LCS 240-562650/2-A	Lab Control Sample	94	123
MB 240-562650/1-A	Method Blank	53	93

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
LCS 410-346721/6-A	Lab Control Sample	68
MB 410-346721/1-A	Method Blank	60
MB 410-346721/2-A	Method Blank	55
MB 410-346721/4-A	Method Blank	57
MB 410-346721/5-A	Method Blank	58

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
MB 410-346721/3-A	Method Blank	57

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
240-180646-6	WC-WS2-COMP (01-07)	66
240-180646-12	WC-WS2-COMP (08-14)	65

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 240-562664/20
Matrix: Solid
Analysis Batch: 562664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	0.916		mg/L		92	74 - 127
1,2-Dichloroethane	1.00	0.867		mg/L		87	72 - 120
2-Butanone (MEK)	2.00	1.68		mg/L		84	68 - 130
Benzene	1.00	0.924		mg/L		92	80 - 121
Carbon tetrachloride	1.00	0.883		mg/L		88	69 - 120
Chlorobenzene	1.00	0.872		mg/L		87	80 - 120
Chloroform	1.00	0.967		mg/L		97	75 - 120
Tetrachloroethene	1.00	0.849		mg/L		85	74 - 120
Trichloroethene	1.00	0.860		mg/L		86	75 - 120
Vinyl chloride	1.00	1.06		mg/L		106	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	107		71 - 121
4-Bromofluorobenzene (Surr)	111		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		76 - 120

Lab Sample ID: MB 240-562783/1-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562783

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/20/23 16:48	02/23/23 21:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		56 - 125	02/20/23 16:48	02/23/23 21:38	1
Dibromofluoromethane (Surr)	88		41 - 138	02/20/23 16:48	02/23/23 21:38	1
4-Bromofluorobenzene (Surr)	97		41 - 143	02/20/23 16:48	02/23/23 21:38	1
1,2-Dichloroethane-d4 (Surr)	97		58 - 125	02/20/23 16:48	02/23/23 21:38	1

Lab Sample ID: LCS 240-562783/2-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562783

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.27		mg/Kg		127	49 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		56 - 125
Dibromofluoromethane (Surr)	86		41 - 138
4-Bromofluorobenzene (Surr)	96		41 - 143
1,2-Dichloroethane-d4 (Surr)	97		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Acetone	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Benzene	ND		0.25	0.042	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Bromoform	ND		0.25	0.23	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chloroform	ND		0.25	0.054	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Styrene	ND		0.25	0.052	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Toluene	ND		0.25	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/21/23 13:30	02/23/23 08:45	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	85		56 - 125	02/21/23 13:30	02/23/23 08:45	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/23/23 08:45	1
4-Bromofluorobenzene (Surr)	75		41 - 143	02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/23/23 08:45	1

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 15:57	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		56 - 125	02/21/23 13:30	02/23/23 15:57	1
Dibromofluoromethane (Surr)	89		41 - 138	02/21/23 13:30	02/23/23 15:57	1
4-Bromofluorobenzene (Surr)	99		41 - 143	02/21/23 13:30	02/23/23 15:57	1
1,2-Dichloroethane-d4 (Surr)	95		58 - 125	02/21/23 13:30	02/23/23 15:57	1

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 22:51	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		56 - 125	02/21/23 13:30	02/23/23 22:51	1
Dibromofluoromethane (Surr)	86		41 - 138	02/21/23 13:30	02/23/23 22:51	1
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/23/23 22:51	1
1,2-Dichloroethane-d4 (Surr)	97		58 - 125	02/21/23 13:30	02/23/23 22:51	1

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	1.25	1.13		mg/Kg		90	74 - 136
1,1,1,2-Tetrachloroethane	1.25	1.14		mg/Kg		91	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.23		mg/Kg		98	64 - 148
1,1,2-Trichloroethane	1.25	1.18		mg/Kg		94	79 - 120
1,1-Dichloroethane	1.25	1.10		mg/Kg		88	74 - 121
1,1-Dichloroethene	1.25	1.09		mg/Kg		87	68 - 141
1,2,4-Trichlorobenzene	1.25	1.12		mg/Kg		90	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.803		mg/Kg		64	52 - 133
Ethylene Dibromide	1.25	1.18		mg/Kg		94	80 - 121
1,2-Dichlorobenzene	1.25	1.13		mg/Kg		90	73 - 120
1,2-Dichloroethane	1.25	1.13		mg/Kg		91	71 - 123

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloropropane	1.25	1.12		mg/Kg		89	76 - 126
1,3-Dichlorobenzene	1.25	1.11		mg/Kg		89	73 - 120
1,4-Dichlorobenzene	1.25	1.10		mg/Kg		88	74 - 120
2-Butanone (MEK)	2.50	2.84		mg/Kg		114	63 - 142
2-Hexanone	2.50	2.34		mg/Kg		93	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.37		mg/Kg		95	62 - 142
Acetone	2.50	2.84		mg/Kg		114	58 - 160
Benzene	1.25	1.16		mg/Kg		93	76 - 121
Dichlorobromomethane	1.25	1.12		mg/Kg		90	71 - 138
Bromoform	1.25	1.02		mg/Kg		82	57 - 140
Bromomethane	1.25	0.639		mg/Kg		51	10 - 171
Carbon disulfide	1.25	0.964		mg/Kg		77	43 - 152
Carbon tetrachloride	1.25	1.14		mg/Kg		91	64 - 144
Chlorobenzene	1.25	1.10		mg/Kg		88	80 - 120
Chloroethane	1.25	0.926		mg/Kg		74	11 - 164
Chloroform	1.25	1.17		mg/Kg		93	78 - 120
Chloromethane	1.25	0.832		mg/Kg		67	41 - 142
cis-1,2-Dichloroethene	1.25	1.12		mg/Kg		90	78 - 124
cis-1,3-Dichloropropene	1.25	1.05		mg/Kg		84	70 - 133
Cyclohexane	1.25	1.13		mg/Kg		90	65 - 137
Chlorodibromomethane	1.25	1.04		mg/Kg		83	68 - 131
Dichlorodifluoromethane	1.25	0.847		mg/Kg		68	21 - 150
Ethylbenzene	1.25	1.16		mg/Kg		93	80 - 120
Isopropylbenzene	1.25	1.20		mg/Kg		96	80 - 130
Methyl acetate	2.50	2.34		mg/Kg		94	60 - 133
Methyl tert-butyl ether	1.25	1.16		mg/Kg		92	70 - 130
Methylcyclohexane	1.25	1.15		mg/Kg		92	70 - 138
Methylene Chloride	1.25	0.921		mg/Kg		74	71 - 124
Styrene	1.25	1.22		mg/Kg		98	75 - 140
Tetrachloroethene	1.25	1.13		mg/Kg		90	76 - 127
Toluene	1.25	1.13		mg/Kg		91	80 - 120
trans-1,2-Dichloroethene	1.25	1.15		mg/Kg		92	76 - 130
trans-1,3-Dichloropropene	1.25	0.983		mg/Kg		79	61 - 121
Trichloroethene	1.25	1.17		mg/Kg		94	74 - 130
Trichlorofluoromethane	1.25	0.979		mg/Kg		78	50 - 154
Vinyl chloride	1.25	0.976		mg/Kg		78	49 - 146
Xylenes, Total	2.50	2.39		mg/Kg		96	80 - 122
m-Xylene & p-Xylene	1.25	1.18		mg/Kg		94	80 - 122
o-Xylene	1.25	1.21		mg/Kg		97	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	80		41 - 138
4-Bromofluorobenzene (Surr)	75		41 - 143
1,2-Dichloroethane-d4 (Surr)	75		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.08		mg/Kg		108	49 - 146
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	101		56 - 125				
Dibromofluoromethane (Surr)	90		41 - 138				
4-Bromofluorobenzene (Surr)	101		41 - 143				
1,2-Dichloroethane-d4 (Surr)	97		58 - 125				

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.34		mg/Kg		134	49 - 146
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	101		56 - 125				
Dibromofluoromethane (Surr)	88		41 - 138				
4-Bromofluorobenzene (Surr)	96		41 - 143				
1,2-Dichloroethane-d4 (Surr)	98		58 - 125				

Lab Sample ID: 240-180646-3 MS
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: WC-WS2-03 (2-3)
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	ND		1.09	1.36		mg/Kg	☼	125	32 - 163
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	105		56 - 125						
Dibromofluoromethane (Surr)	88		41 - 138						
4-Bromofluorobenzene (Surr)	97		41 - 143						
1,2-Dichloroethane-d4 (Surr)	94		58 - 125						

Lab Sample ID: 240-180646-3 MSD
Matrix: Solid
Analysis Batch: 563099

Client Sample ID: WC-WS2-03 (2-3)
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Vinyl chloride	ND		1.09	1.28		mg/Kg	☼	118	32 - 163	6	38
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	107		56 - 125								
Dibromofluoromethane (Surr)	84		41 - 138								
4-Bromofluorobenzene (Surr)	96		41 - 143								
1,2-Dichloroethane-d4 (Surr)	91		58 - 125								

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-562615/1-A MB
Matrix: Solid
Analysis Batch: 562664

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 18:22	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 18:22	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/20/23 18:22	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 18:22	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 18:22	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 18:22	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 18:22	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 18:22	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 18:22	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/20/23 18:22	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	95		80 - 120					02/20/23 18:22	1
Dibromofluoromethane (Surr)	105		71 - 121					02/20/23 18:22	1
4-Bromofluorobenzene (Surr)	108		80 - 120					02/20/23 18:22	1
1,2-Dichloroethane-d4 (Surr)	102		76 - 120					02/20/23 18:22	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-562719/1-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562719

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/20/23 10:04	02/22/23 15:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562719/1-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562719

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Atrazine	ND		0.20	0.036	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Carbazole	ND		0.050	0.019	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Isophorone	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Phenol	ND		0.050	0.0080	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/20/23 10:04	02/22/23 15:15	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/20/23 10:04	02/22/23 15:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	112		46 - 137	02/20/23 10:04	02/22/23 15:15	1
Phenol-d5 (Surr)	56		26 - 120	02/20/23 10:04	02/22/23 15:15	1
Nitrobenzene-d5 (Surr)	56		25 - 120	02/20/23 10:04	02/22/23 15:15	1
2-Fluorophenol (Surr)	51		20 - 120	02/20/23 10:04	02/22/23 15:15	1
2-Fluorobiphenyl (Surr)	81		34 - 120	02/20/23 10:04	02/22/23 15:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562719/1-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	45		10 - 120	02/20/23 10:04	02/22/23 15:15	1

Lab Sample ID: LCS 240-562719/25-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	128		46 - 137
Phenol-d5 (Surr)	59		26 - 120
Nitrobenzene-d5 (Surr)	57		25 - 120
2-Fluorophenol (Surr)	54		20 - 120
2-Fluorobiphenyl (Surr)	85		34 - 120
2,4,6-Tribromophenol (Surr)	41		10 - 120

Lab Sample ID: LCS 240-562719/26-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	132		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	61		25 - 120
2-Fluorophenol (Surr)	56		20 - 120
2-Fluorobiphenyl (Surr)	88		34 - 120
2,4,6-Tribromophenol (Surr)	43		10 - 120

Lab Sample ID: LCS 240-562719/2-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1'-Biphenyl	0.667	0.567		mg/Kg		85	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.361		mg/Kg		54	38 - 120
2,4,5-Trichlorophenol	0.667	0.649		mg/Kg		97	50 - 120
2,4,6-Trichlorophenol	0.667	0.650		mg/Kg		97	50 - 120
2,4-Dichlorophenol	0.667	0.629		mg/Kg		94	50 - 120
2,4-Dimethylphenol	0.667	0.450		mg/Kg		67	24 - 120
2,4-Dinitrophenol	1.33	0.881		mg/Kg		66	19 - 132
2,4-Dinitrotoluene	0.667	0.590		mg/Kg		89	64 - 120
2,6-Dinitrotoluene	0.667	0.656		mg/Kg		98	62 - 120
2-Chloronaphthalene	0.667	0.552		mg/Kg		83	51 - 120
2-Chlorophenol	0.667	0.523		mg/Kg		78	47 - 120
2-Methylnaphthalene	0.667	0.487		mg/Kg		73	38 - 120
2-Methylphenol	0.667	0.454		mg/Kg		68	45 - 120
2-Nitroaniline	0.667	0.458		mg/Kg		69	57 - 120
2-Nitrophenol	0.667	0.627		mg/Kg		94	51 - 120
3,3'-Dichlorobenzidine	1.33	1.07		mg/Kg		80	27 - 199
3-Nitroaniline	0.667	0.490		mg/Kg		74	41 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562719/2-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,6-Dinitro-2-methylphenol	1.33	0.954		mg/Kg		72	46 - 126
4-Bromophenyl phenyl ether	0.667	0.683		mg/Kg		102	65 - 120
4-Chloro-3-methylphenol	0.667	0.512		mg/Kg		77	51 - 120
4-Chloroaniline	0.667	0.383		mg/Kg		57	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.592		mg/Kg		89	59 - 120
4-Nitroaniline	0.667	0.598		mg/Kg		90	48 - 128
4-Nitrophenol	1.33	0.927		mg/Kg		70	43 - 120
Acenaphthene	0.667	0.582		mg/Kg		87	52 - 120
Acenaphthylene	0.667	0.621		mg/Kg		93	52 - 120
Acetophenone	0.667	0.449		mg/Kg		67	47 - 120
Anthracene	0.667	0.616		mg/Kg		92	64 - 120
Atrazine	1.33	1.50		mg/Kg		113	71 - 125
Benzaldehyde	1.33	0.820		mg/Kg		61	42 - 120
Benzo[a]anthracene	0.667	0.683		mg/Kg		102	70 - 120
Benzo[a]pyrene	0.667	0.615		mg/Kg		92	63 - 125
Benzo[b]fluoranthene	0.667	0.609		mg/Kg		91	64 - 121
Benzo[g,h,i]perylene	0.667	0.637		mg/Kg		96	62 - 120
Benzo[k]fluoranthene	0.667	0.607		mg/Kg		91	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.460		mg/Kg		69	50 - 120
Bis(2-chloroethyl)ether	0.667	0.388		mg/Kg		58	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.611		mg/Kg		92	63 - 133
Butyl benzyl phthalate	0.667	0.592		mg/Kg		89	66 - 127
Caprolactam	1.33	1.11		mg/Kg		83	67 - 120
Carbazole	0.667	0.619		mg/Kg		93	61 - 129
Chrysene	0.667	0.643		mg/Kg		96	67 - 120
Dibenz(a,h)anthracene	0.667	0.641		mg/Kg		96	62 - 120
Dibenzofuran	0.667	0.561		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.566		mg/Kg		85	61 - 120
Dimethyl phthalate	0.667	0.566		mg/Kg		85	64 - 120
Di-n-butyl phthalate	0.667	0.652		mg/Kg		98	70 - 129
Di-n-octyl phthalate	0.667	0.510		mg/Kg		76	64 - 129
Fluoranthene	0.667	0.600		mg/Kg		90	71 - 124
Fluorene	0.667	0.587		mg/Kg		88	58 - 120
Hexachlorobenzene	0.667	0.609		mg/Kg		91	59 - 120
Hexachlorobutadiene	0.667	0.521		mg/Kg		78	45 - 120
Hexachlorocyclopentadiene	0.667	0.363		mg/Kg		55	10 - 120
Hexachloroethane	0.667	0.406		mg/Kg		61	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.664		mg/Kg		100	65 - 122
Isophorone	0.667	0.459		mg/Kg		69	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.420		mg/Kg		63	48 - 120
N-Nitrosodiphenylamine	0.667	0.554		mg/Kg		83	64 - 120
Naphthalene	0.667	0.502		mg/Kg		75	34 - 120
Nitrobenzene	0.667	0.416		mg/Kg		62	48 - 120
Pentachlorophenol	1.33	0.681		mg/Kg		51	10 - 120
Phenanthrene	0.667	0.586		mg/Kg		88	60 - 120
Phenol	0.667	0.437		mg/Kg		66	48 - 120
Pyrene	0.667	0.670		mg/Kg		101	67 - 120
3 & 4 Methylphenol	0.667	0.476		mg/Kg		71	49 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562719/2-A
Matrix: Solid
Analysis Batch: 563049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562719

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	110		46 - 137
Phenol-d5 (Surr)	74		26 - 120
Nitrobenzene-d5 (Surr)	62		25 - 120
2-Fluorophenol (Surr)	75		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	107		10 - 120

Lab Sample ID: MB 240-562821/9-A
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562821

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/21/23 08:07	02/23/23 13:52	1
Pyridine	ND		0.0040	0.00036	mg/L		02/21/23 08:07	02/23/23 13:52	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/21/23 08:07	02/23/23 13:52	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/21/23 08:07	02/23/23 13:52	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/21/23 08:07	02/23/23 13:52	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/21/23 08:07	02/23/23 13:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	119		46 - 137	02/21/23 08:07	02/23/23 13:52	1
Phenol-d5 (Surr)	59		26 - 120	02/21/23 08:07	02/23/23 13:52	1
Nitrobenzene-d5 (Surr)	74		24 - 120	02/21/23 08:07	02/23/23 13:52	1
2-Fluorophenol (Surr)	71		19 - 120	02/21/23 08:07	02/23/23 13:52	1
2-Fluorobiphenyl (Surr)	97		33 - 120	02/21/23 08:07	02/23/23 13:52	1
2,4,6-Tribromophenol (Surr)	97		10 - 120	02/21/23 08:07	02/23/23 13:52	1

Lab Sample ID: LCS 240-562821/10-A
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562821

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dichlorobenzene	0.0800	0.0539		mg/L		67	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0746		mg/L		93	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0726		mg/L		91	51 - 120
2,4-Dinitrotoluene	0.0800	0.0658		mg/L		82	58 - 125
Pyridine	0.160	0.0504		mg/L		31	10 - 120
2-Methylphenol	0.0800	0.0613		mg/L		77	45 - 120
Hexachlorobenzene	0.0800	0.0638		mg/L		80	55 - 120
Hexachlorobutadiene	0.0800	0.0582		mg/L		73	41 - 120
Hexachloroethane	0.0800	0.0498		mg/L		62	39 - 120
Nitrobenzene	0.0800	0.0490		mg/L		61	47 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562821/10-A
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562821

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	0.160	0.108		mg/L		68	19 - 132
3 & 4 Methylphenol	0.0800	0.0533		mg/L		67	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>Terphenyl-d14 (Surr)</i>	105		46 - 137
<i>Phenol-d5 (Surr)</i>	60		26 - 120
<i>Nitrobenzene-d5 (Surr)</i>	67		24 - 120
<i>2-Fluorophenol (Surr)</i>	67		19 - 120
<i>2-Fluorobiphenyl (Surr)</i>	91		33 - 120
<i>2,4,6-Tribromophenol (Surr)</i>	99		10 - 120

Lab Sample ID: MB 240-562873/1-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562873

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Atrazine	ND		0.20	0.036	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/21/23 09:46	02/23/23 09:46	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562873/1-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562873

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Carbazole	ND		0.050	0.019	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Isophorone	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Phenol	ND		0.050	0.0080	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	118		46 - 137	02/21/23 09:46	02/23/23 09:46	1
Phenol-d5 (Surr)	93		26 - 120	02/21/23 09:46	02/23/23 09:46	1
Nitrobenzene-d5 (Surr)	82		25 - 120	02/21/23 09:46	02/23/23 09:46	1
2-Fluorophenol (Surr)	75		20 - 120	02/21/23 09:46	02/23/23 09:46	1
2-Fluorobiphenyl (Surr)	91		34 - 120	02/21/23 09:46	02/23/23 09:46	1
2,4,6-Tribromophenol (Surr)	53		10 - 120	02/21/23 09:46	02/23/23 09:46	1

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
bis (2-chloroisopropyl) ether	0.667	0.558		mg/Kg		84	38 - 120
2,4,5-Trichlorophenol	0.667	0.585		mg/Kg		88	50 - 120
2,4,6-Trichlorophenol	0.667	0.627		mg/Kg		94	50 - 120
2,4-Dichlorophenol	0.667	0.593		mg/Kg		89	50 - 120
2,4-Dimethylphenol	0.667	0.527		mg/Kg		79	24 - 120
2,4-Dinitrophenol	1.33	1.24		mg/Kg		93	19 - 132
2,4-Dinitrotoluene	0.667	0.671		mg/Kg		101	64 - 120
2,6-Dinitrotoluene	0.667	0.640		mg/Kg		96	62 - 120
2-Chloronaphthalene	0.667	0.602		mg/Kg		90	51 - 120
2-Chlorophenol	0.667	0.536		mg/Kg		80	47 - 120
2-Methylnaphthalene	0.667	0.532		mg/Kg		80	38 - 120
2-Methylphenol	0.667	0.530		mg/Kg		79	45 - 120
2-Nitroaniline	0.667	0.627		mg/Kg		94	57 - 120
2-Nitrophenol	0.667	0.551		mg/Kg		83	51 - 120
3,3'-Dichlorobenzidine	1.33	1.20		mg/Kg		90	27 - 199
3-Nitroaniline	0.667	0.487		mg/Kg		73	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.25		mg/Kg		94	46 - 126
4-Bromophenyl phenyl ether	0.667	0.579		mg/Kg		87	65 - 120
4-Chloro-3-methylphenol	0.667	0.588		mg/Kg		88	51 - 120
4-Chloroaniline	0.667	0.365		mg/Kg		55	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.540		mg/Kg		81	59 - 120
4-Nitroaniline	0.667	0.601		mg/Kg		90	48 - 128
4-Nitrophenol	1.33	1.33		mg/Kg		99	43 - 120
Acenaphthene	0.667	0.561		mg/Kg		84	52 - 120
Acenaphthylene	0.667	0.575		mg/Kg		86	52 - 120
Acetophenone	0.667	0.550		mg/Kg		82	47 - 120
Anthracene	0.667	0.589		mg/Kg		88	64 - 120
Atrazine	1.33	1.34		mg/Kg		100	71 - 125
Benzaldehyde	1.33	1.13		mg/Kg		85	42 - 120
Benzo[a]anthracene	0.667	0.674		mg/Kg		101	70 - 120
Benzo[a]pyrene	0.667	0.596		mg/Kg		89	63 - 125
Benzo[b]fluoranthene	0.667	0.631		mg/Kg		95	64 - 121
Benzo[g,h,i]perylene	0.667	0.652		mg/Kg		98	62 - 120
Benzo[k]fluoranthene	0.667	0.618		mg/Kg		93	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.556		mg/Kg		83	50 - 120
Bis(2-chloroethyl)ether	0.667	0.494		mg/Kg		74	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.736		mg/Kg		110	63 - 133
Butyl benzyl phthalate	0.667	0.711		mg/Kg		107	66 - 127
Caprolactam	1.33	1.29		mg/Kg		97	67 - 120
Carbazole	0.667	0.595		mg/Kg		89	61 - 129
Chrysene	0.667	0.655		mg/Kg		98	67 - 120
Dibenz(a,h)anthracene	0.667	0.652		mg/Kg		98	62 - 120
Dibenzofuran	0.667	0.559		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.631		mg/Kg		95	61 - 120
Dimethyl phthalate	0.667	0.619		mg/Kg		93	64 - 120
Di-n-butyl phthalate	0.667	0.616		mg/Kg		92	70 - 129
Di-n-octyl phthalate	0.667	0.677		mg/Kg		102	64 - 129
Fluoranthene	0.667	0.600		mg/Kg		90	71 - 124
Fluorene	0.667	0.548		mg/Kg		82	58 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	0.667	0.557		mg/Kg		83	59 - 120
Hexachlorobutadiene	0.667	0.510		mg/Kg		77	45 - 120
Hexachlorocyclopentadiene	0.667	0.417		mg/Kg		63	10 - 120
Hexachloroethane	0.667	0.496		mg/Kg		74	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.663		mg/Kg		99	65 - 122
Isophorone	0.667	0.584		mg/Kg		88	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.578		mg/Kg		87	48 - 120
N-Nitrosodiphenylamine	0.667	0.574		mg/Kg		86	64 - 120
Naphthalene	0.667	0.511		mg/Kg		77	34 - 120
Nitrobenzene	0.667	0.562		mg/Kg		84	48 - 120
Pentachlorophenol	1.33	0.837		mg/Kg		63	10 - 120
Phenanthrene	0.667	0.583		mg/Kg		87	60 - 120
Phenol	0.667	0.557		mg/Kg		84	48 - 120
Pyrene	0.667	0.687		mg/Kg		103	67 - 120
3 & 4 Methylphenol	0.667	0.572		mg/Kg		86	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	107		46 - 137
Phenol-d5 (Surr)	90		26 - 120
Nitrobenzene-d5 (Surr)	85		25 - 120
2-Fluorophenol (Surr)	81		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	85		10 - 120

Lab Sample ID: LCS 240-562873/3-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	81		26 - 120
Nitrobenzene-d5 (Surr)	69		25 - 120
2-Fluorophenol (Surr)	67		20 - 120
2-Fluorobiphenyl (Surr)	79		34 - 120
2,4,6-Tribromophenol (Surr)	51		10 - 120

Lab Sample ID: LCS 240-562873/4-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	82		26 - 120
Nitrobenzene-d5 (Surr)	69		25 - 120
2-Fluorophenol (Surr)	71		20 - 120
2-Fluorobiphenyl (Surr)	79		34 - 120
2,4,6-Tribromophenol (Surr)	60		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180646-3 MS
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: WC-WS2-03 (2-3)
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
1,1'-Biphenyl	ND		0.832	0.768	J	mg/Kg	☼	92		29 - 120
bis (2-chloroisopropyl) ether	ND		0.832	0.994	J	mg/Kg	☼	120		10 - 120
2,4,5-Trichlorophenol	ND		0.832	ND		mg/Kg	☼	NC		35 - 120
2,4,6-Trichlorophenol	ND		0.832	ND		mg/Kg	☼	NC		18 - 120
2,4-Dichlorophenol	ND		0.832	ND		mg/Kg	☼	NC		21 - 120
2,4-Dimethylphenol	ND		0.832	ND		mg/Kg	☼	NC		10 - 120
2,4-Dinitrophenol	ND		1.66	ND		mg/Kg	☼	NC		10 - 126
2,4-Dinitrotoluene	ND		0.832	ND		mg/Kg	☼	NC		46 - 120
2,6-Dinitrotoluene	ND		0.832	ND		mg/Kg	☼	NC		44 - 120
2-Chloronaphthalene	ND		0.832	0.527	J	mg/Kg	☼	63		33 - 120
2-Chlorophenol	ND		0.832	0.407	J	mg/Kg	☼	49		19 - 120
2-Methylnaphthalene	2.3		0.832	3.15		mg/Kg	☼	101		13 - 122
2-Methylphenol	ND	F1	0.832	ND	F1	mg/Kg	☼	0		12 - 120
2-Nitroaniline	ND		0.832	ND		mg/Kg	☼	NC		36 - 122
2-Nitrophenol	ND		0.832	0.465	J	mg/Kg	☼	56		28 - 120
3,3'-Dichlorobenzidine	ND	F1	1.66	ND	F1	mg/Kg	☼	0		10 - 179
3-Nitroaniline	ND		0.832	ND		mg/Kg	☼	NC		10 - 123
4,6-Dinitro-2-methylphenol	ND		1.66	ND		mg/Kg	☼	NC		11 - 120
4-Bromophenyl phenyl ether	ND		0.832	0.424	J	mg/Kg	☼	51		49 - 120
4-Chloro-3-methylphenol	ND		0.832	ND		mg/Kg	☼	NC		35 - 120
4-Chloroaniline	ND	F1	0.832	ND	F1	mg/Kg	☼	0		10 - 120
4-Chlorophenyl phenyl ether	ND		0.832	0.476	J	mg/Kg	☼	57		45 - 120
4-Nitroaniline	ND		0.832	ND		mg/Kg	☼	NC		13 - 129
4-Nitrophenol	ND		1.66	ND		mg/Kg	☼	NC		28 - 123
Acenaphthene	0.12	J	0.832	0.706		mg/Kg	☼	71		33 - 120
Acenaphthylene	ND		0.832	0.615		mg/Kg	☼	74		39 - 120
Acetophenone	ND		0.832	0.848	J	mg/Kg	☼	102		11 - 120
Anthracene	0.20	J	0.832	0.726		mg/Kg	☼	64		30 - 127
Atrazine	ND		1.66	1.05	J	mg/Kg	☼	63		52 - 126
Benzaldehyde	ND		1.66	0.763	J	mg/Kg	☼	46		13 - 120
Benzo[a]anthracene	0.57		0.832	1.18		mg/Kg	☼	73		24 - 137
Benzo[a]pyrene	0.41		0.832	0.923		mg/Kg	☼	62		28 - 136
Benzo[b]fluoranthene	0.72		0.832	1.32		mg/Kg	☼	73		21 - 142
Benzo[g,h,i]perylene	0.29	J	0.832	0.562		mg/Kg	☼	33		10 - 144
Benzo[k]fluoranthene	0.28	J	0.832	0.907		mg/Kg	☼	75		36 - 135
Bis(2-chloroethoxy)methane	ND		0.832	0.528	J	mg/Kg	☼	63		25 - 120
Bis(2-chloroethyl)ether	ND		0.832	0.323	J	mg/Kg	☼	39		16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.832	ND		mg/Kg	☼	NC		37 - 143
Butyl benzyl phthalate	ND	F1	0.832	ND	F1	mg/Kg	☼	0		49 - 130
Caprolactam	ND		1.66	ND		mg/Kg	☼	NC		37 - 127
Carbazole	ND		0.832	0.650	J	mg/Kg	☼	78		33 - 132
Chrysene	0.68		0.832	1.42		mg/Kg	☼	88		28 - 129
Dibenz(a,h)anthracene	ND		0.832	0.402		mg/Kg	☼	48		10 - 132
Dibenzofuran	0.75	J	0.832	1.28		mg/Kg	☼	64		33 - 120
Diethyl phthalate	ND	F1	0.832	ND	F1	mg/Kg	☼	0		48 - 120
Dimethyl phthalate	ND		0.832	0.489	J	mg/Kg	☼	59		45 - 120
Di-n-butyl phthalate	ND		0.832	ND		mg/Kg	☼	NC		40 - 137
Di-n-octyl phthalate	ND	F1	0.832	ND	F1	mg/Kg	☼	0		34 - 152

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180646-3 MSD

Client Sample ID: WC-WS2-03 (2-3)

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 563114

Prep Batch: 562873

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
4,6-Dinitro-2-methylphenol	ND		1.62	ND		mg/Kg	*	NC	11 - 120	NC	40
4-Bromophenyl phenyl ether	ND		0.811	0.513	J	mg/Kg	*	63	49 - 120	19	42
4-Chloro-3-methylphenol	ND		0.811	ND		mg/Kg	*	NC	35 - 120	NC	42
4-Chloroaniline	ND	F1	0.811	ND	F1	mg/Kg	*	0	10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND		0.811	0.561	J	mg/Kg	*	69	45 - 120	16	44
4-Nitroaniline	ND		0.811	ND		mg/Kg	*	NC	13 - 129	NC	38
4-Nitrophenol	ND		1.62	ND		mg/Kg	*	NC	28 - 123	NC	45
Acenaphthene	0.12	J	0.811	0.701		mg/Kg	*	72	33 - 120	1	45
Acenaphthylene	ND		0.811	0.661		mg/Kg	*	81	39 - 120	7	45
Acetophenone	ND		0.811	0.830	J	mg/Kg	*	102	11 - 120	2	45
Anthracene	0.20	J	0.811	0.760		mg/Kg	*	69	30 - 127	5	45
Atrazine	ND		1.62	1.23	J	mg/Kg	*	76	52 - 126	16	34
Benzaldehyde	ND		1.62	0.847	J	mg/Kg	*	52	13 - 120	10	45
Benzo[a]anthracene	0.57		0.811	1.15		mg/Kg	*	71	24 - 137	3	42
Benzo[a]pyrene	0.41		0.811	0.939		mg/Kg	*	66	28 - 136	2	41
Benzo[b]fluoranthene	0.72		0.811	1.29		mg/Kg	*	71	21 - 142	2	42
Benzo[g,h,i]perylene	0.29	J	0.811	0.518		mg/Kg	*	29	10 - 144	8	40
Benzo[k]fluoranthene	0.28	J	0.811	0.933		mg/Kg	*	81	36 - 135	3	44
Bis(2-chloroethoxy)methane	ND		0.811	0.588	J	mg/Kg	*	73	25 - 120	11	45
Bis(2-chloroethyl)ether	ND		0.811	0.350	J	mg/Kg	*	43	16 - 120	8	45
Bis(2-ethylhexyl) phthalate	ND		0.811	ND		mg/Kg	*	NC	37 - 143	NC	38
Butyl benzyl phthalate	ND	F1	0.811	0.608	J	mg/Kg	*	75	49 - 130	NC	41
Caprolactam	ND		1.62	ND		mg/Kg	*	NC	37 - 127	NC	45
Carbazole	ND		0.811	0.711	J	mg/Kg	*	88	33 - 132	9	45
Chrysene	0.68		0.811	1.41		mg/Kg	*	90	28 - 129	1	42
Dibenz(a,h)anthracene	ND		0.811	0.385		mg/Kg	*	47	10 - 132	4	37
Dibenzofuran	0.75	J	0.811	1.27		mg/Kg	*	65	33 - 120	1	43
Diethyl phthalate	ND	F1	0.811	ND	F1	mg/Kg	*	0	48 - 120	NC	38
Dimethyl phthalate	ND		0.811	0.537	J	mg/Kg	*	66	45 - 120	9	43
Di-n-butyl phthalate	ND		0.811	ND		mg/Kg	*	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND	F1	0.811	ND	F1	mg/Kg	*	0	34 - 152	NC	39
Fluoranthene	1.2		0.811	1.81		mg/Kg	*	81	31 - 140	6	45
Fluorene	0.15	J	0.811	0.721		mg/Kg	*	70	43 - 120	10	39
Hexachlorobenzene	ND		0.811	0.446		mg/Kg	*	55	44 - 120	9	39
Hexachlorobutadiene	ND		0.811	0.466	J	mg/Kg	*	58	13 - 120	2	45
Hexachlorocyclopentadiene	ND		0.811	ND		mg/Kg	*	NC	10 - 120	NC	45
Hexachloroethane	ND		0.811	0.559	J	mg/Kg	*	69	10 - 120	16	45
Indeno[1,2,3-cd]pyrene	0.22	J	0.811	0.525		mg/Kg	*	38	10 - 139	5	41
Isophorone	ND		0.811	0.603	J	mg/Kg	*	74	27 - 120	11	45
N-Nitrosodi-n-propylamine	ND		0.811	0.556	J	mg/Kg	*	69	23 - 120	6	45
N-Nitrosodiphenylamine	ND		0.811	0.720	J	mg/Kg	*	89	30 - 128	3	44
Naphthalene	1.3		0.811	2.26		mg/Kg	*	112	10 - 120	2	45
Nitrobenzene	ND		0.811	0.542	J	mg/Kg	*	67	19 - 120	7	45
Pentachlorophenol	ND	F1	1.62	ND	F1	mg/Kg	*	0	10 - 120	NC	45
Phenanthrene	1.5		0.811	2.09		mg/Kg	*	67	36 - 120	1	41
Phenol	ND		0.811	0.447	J	mg/Kg	*	55	10 - 120	13	45
Pyrene	1.0		0.811	1.61		mg/Kg	*	72	31 - 134	5	43
3 & 4 Methylphenol	ND	F1	0.811	ND	F1	mg/Kg	*	0	10 - 122	NC	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180646-3 MSD
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: WC-WS2-03 (2-3)
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14 (Surr)	67		46 - 137
Phenol-d5 (Surr)	49		26 - 120
Nitrobenzene-d5 (Surr)	67		25 - 120
2-Fluorophenol (Surr)	61		20 - 120
2-Fluorobiphenyl (Surr)	72		34 - 120
2,4,6-Tribromophenol (Surr)	90		10 - 120

Lab Sample ID: 240-180646-6 MS
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: WC-WS2-COMP (01-07)
Prep Type: TCLP
Prep Batch: 562821

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	ND		0.0800	0.0654		mg/L		82	37 - 120
2,4,5-Trichlorophenol	ND		0.0800	0.0789		mg/L		99	25 - 128
2,4,6-Trichlorophenol	ND		0.0800	0.0873		mg/L		109	23 - 122
2,4-Dinitrotoluene	ND		0.0800	0.0721		mg/L		90	27 - 127
Pyridine	ND		0.160	0.0682		mg/L		43	10 - 120
2-Methylphenol	ND		0.0800	0.0673		mg/L		84	22 - 120
Hexachlorobenzene	ND		0.0800	0.0730		mg/L		91	18 - 123
Hexachlorobutadiene	ND		0.0800	0.0701		mg/L		88	10 - 120
Hexachloroethane	ND		0.0800	0.0603		mg/L		75	10 - 120
Nitrobenzene	ND		0.0800	0.0607		mg/L		76	26 - 120
Pentachlorophenol	ND		0.160	0.125		mg/L		78	10 - 132
3 & 4 Methylphenol	ND		0.0800	0.0659		mg/L		82	16 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14 (Surr)	116		46 - 137
Phenol-d5 (Surr)	75		26 - 120
Nitrobenzene-d5 (Surr)	79		24 - 120
2-Fluorophenol (Surr)	83		19 - 120
2-Fluorobiphenyl (Surr)	104		33 - 120
2,4,6-Tribromophenol (Surr)	113		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-562822/6-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562822

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 11:07	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 11:07	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 11:07	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 11:07	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 11:07	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 11:07	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 11:07	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-562822/6-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562822

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	92		10 - 145	02/21/23 08:09	02/22/23 11:07	1
DCB Decachlorobiphenyl	92		10 - 145	02/21/23 08:09	02/22/23 11:07	1
Tetrachloro-m-xylene	67		10 - 123	02/21/23 08:09	02/22/23 11:07	1
Tetrachloro-m-xylene	69		10 - 123	02/21/23 08:09	02/22/23 11:07	1

Lab Sample ID: LCS 240-562822/7-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562822

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	Limits
Heptachlor	0.00100	0.000957		mg/L		96	29 - 120	
Heptachlor epoxide	0.00100	0.000999		mg/L		100	36 - 120	
gamma-BHC (Lindane)	0.00100	0.000920		mg/L		92	23 - 120	
Methoxychlor	0.00100	0.00110		mg/L		110	23 - 140	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	90		10 - 145
DCB Decachlorobiphenyl	90		10 - 145
Tetrachloro-m-xylene	69		10 - 123
Tetrachloro-m-xylene	71		10 - 123

Lab Sample ID: 240-180646-12 MS
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: WC-WS2-COMP (08-14)
Prep Type: TCLP
Prep Batch: 562822

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	Limits
Heptachlor	ND		0.00100	0.000938		mg/L		94	42 - 120	
Heptachlor epoxide	ND		0.00100	0.00100		mg/L		100	54 - 120	
gamma-BHC (Lindane)	ND		0.00100	0.000886		mg/L		89	32 - 120	
Methoxychlor	ND		0.00100	0.00114		mg/L		114	11 - 159	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	89		10 - 145
DCB Decachlorobiphenyl	88		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	61		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-562650/1-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562650

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1221	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 240-562650/1-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562650

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1232	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1242	ND		50	19	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1248	ND		50	17	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1254	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1260	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1262	ND		50	22	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1268	ND		50	16	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Polychlorinated biphenyls, Total	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	53		10 - 149	02/20/23 08:20	02/20/23 19:48	1
DCB Decachlorobiphenyl	93		10 - 174	02/20/23 08:20	02/20/23 19:48	1

Lab Sample ID: LCS 240-562650/2-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562650

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Aroclor-1016	1000	780		ug/Kg		78	28 - 140
Aroclor-1260	1000	955		ug/Kg		96	39 - 153

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	94		10 - 149
DCB Decachlorobiphenyl	123		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-346721/1-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 04:58	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 04:58	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	02/21/23 20:16	02/22/23 04:58	1

Lab Sample ID: MB 410-346721/2-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:26	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:26	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	55		26 - 136	02/21/23 20:16	02/22/23 05:26	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-346721/3-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:54	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:54	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136				02/21/23 20:16	02/22/23 05:54	1

Lab Sample ID: MB 410-346721/4-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:22	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:22	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136				02/21/23 20:16	02/22/23 06:22	1

Lab Sample ID: MB 410-346721/5-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:49	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:49	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				02/21/23 20:16	02/22/23 06:49	1

Lab Sample ID: LCS 410-346721/6-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00397	J	mg/L		79	58 - 148
2,4-D	0.0502	0.0389	J	mg/L		78	42 - 147
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136				

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-346502/1-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-346502/1-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1
Isotope Dilution									
	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	74		26 - 159				02/21/23 12:53	02/21/23 16:49	1
13C8 PFOS	89		41 - 154				02/21/23 12:53	02/21/23 16:49	1

Lab Sample ID: LCS 410-346502/2-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346502

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid	25.0	20.9		ng/g		84	59 - 131
Perfluorooctanesulfonic acid	23.1	20.9		ng/g		90	61 - 126
Isotope Dilution							
	LCS %Recovery	LCS Qualifier	Limits				
13C8 PFOA	85		26 - 159				
13C8 PFOS	91		41 - 154				

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-562706/2-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 08:57	1
Barium	ND		0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 08:57	1
Cadmium	0.000220	J	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 08:57	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 08:57	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 08:57	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 08:57	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 08:57	1

Lab Sample ID: LCS 240-562706/3-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.99		mg/L		99	50 - 150
Barium	2.00	1.87		mg/L		93	50 - 150
Cadmium	1.00	0.976		mg/L		98	50 - 150
Chromium	1.00	0.958		mg/L		96	50 - 150
Lead	1.00	0.916		mg/L		92	50 - 150
Selenium	2.00	2.00		mg/L		100	50 - 150
Silver	0.100	0.102		mg/L		102	50 - 150

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LB 240-562607/1-B
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562706

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 08:52	1
Barium	0.00326	J	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 08:52	1
Cadmium	ND		0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 08:52	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 08:52	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 08:52	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 08:52	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 08:52	1

Lab Sample ID: 240-180646-1 MS
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: WC-WS2-01 (1-1.5)
Prep Type: TCLP
Prep Batch: 562706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		5.00	4.91		mg/L		98	75 - 125
Barium	0.38	J B	50.0	48.1		mg/L		95	75 - 125
Cadmium	0.0016	J B	1.00	0.997		mg/L		100	75 - 125
Chromium	ND		5.00	4.83		mg/L		97	75 - 125
Lead	0.0093	J	5.00	4.70		mg/L		94	75 - 125
Selenium	ND		1.00	0.998		mg/L		100	75 - 125
Silver	ND		1.00	1.00		mg/L		100	75 - 125

Lab Sample ID: 240-180646-1 MSD
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: WC-WS2-01 (1-1.5)
Prep Type: TCLP
Prep Batch: 562706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		5.00	5.07		mg/L		101	75 - 125	3	20
Barium	0.38	J B	50.0	47.0		mg/L		93	75 - 125	2	20
Cadmium	0.0016	J B	1.00	1.04		mg/L		104	75 - 125	4	20
Chromium	ND		5.00	4.89		mg/L		98	75 - 125	1	20
Lead	0.0093	J	5.00	4.84		mg/L		97	75 - 125	3	20
Selenium	ND		1.00	1.00		mg/L		100	75 - 125	0	20
Silver	ND		1.00	1.02		mg/L		102	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-562707/2-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562707

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:35	1

Lab Sample ID: LCS 240-562707/3-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562707

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00481		mg/L		96	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-562607/1-C
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562707

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	Result	Qualifier	0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:33	1
	ND								

Lab Sample ID: 240-180646-1 MS
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: WC-WS2-01 (1-1.5)
Prep Type: TCLP
Prep Batch: 562707

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	ND		0.00500	0.00514		mg/L		103	80 - 120

Lab Sample ID: 240-180646-1 MSD
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: WC-WS2-01 (1-1.5)
Prep Type: TCLP
Prep Batch: 562707

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits	Limit
Mercury	ND		0.00500	0.00496		mg/L		99	80 - 120	4 20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180646-1 DU
Matrix: Solid
Analysis Batch: 562608

Client Sample ID: WC-WS2-01 (1-1.5)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Solids	83.3		86.6		%		4	20
Percent Moisture	16.7		13.4	F3	%		22	20

Lab Sample ID: 240-180646-10 DU
Matrix: Solid
Analysis Batch: 562608

Client Sample ID: WC-WS2-09 (5-6)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Solids	82.2		79.9		%		3	20
Percent Moisture	17.8		20.1		%		12	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

GC/MS VOA

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	Composite	
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	Composite	

Leach Batch: 562615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	1311	562584
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	1311	562584
LB 240-562615/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 562664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	8260D	562615
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	8260D	562615
LB 240-562615/1-A MB	Method Blank	TCLP	Solid	8260D	562615
LCS 240-562664/20	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 562783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	5035	
MB 240-562783/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562783/2-A	Lab Control Sample	Total/NA	Solid	5035	

Prep Batch: 562918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	5035	
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	5035	
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	5035	
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	5035	
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	5035	
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	5035	
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	5035	
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	5035	
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	5035	
MB 240-562918/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-180646-3 MS	WC-WS2-03 (2-3)	Total/NA	Solid	5035	
240-180646-3 MSD	WC-WS2-03 (2-3)	Total/NA	Solid	5035	

Analysis Batch: 563099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	8260D	562918
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918
240-180646-3 MS	WC-WS2-03 (2-3)	Total/NA	Solid	8260D	562918
240-180646-3 MSD	WC-WS2-03 (2-3)	Total/NA	Solid	8260D	562918

Analysis Batch: 563103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	8260D	562918
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

GC/MS VOA

Analysis Batch: 563234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	8260D	562783
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	8260D	562918
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	8260D	562918
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	8260D	562918
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	8260D	562918
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	8260D	562918
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	8260D	562918
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	8260D	562918
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	8260D	562918
MB 240-562783/1-A	Method Blank	Total/NA	Solid	8260D	562783
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562783/2-A	Lab Control Sample	Total/NA	Solid	8260D	562783
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918

Analysis Batch: 563303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	8260D	562783
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	8260D	562918
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	8260D	562918
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	8260D	562918
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	8260D	562918
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	8260D	562918
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	8260D	562918
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	8260D	562918
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	8260D	562918

GC/MS Semi VOA

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	Composite	
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	Composite	
240-180646-6 MS	WC-WS2-COMP (01-07)	TCLP	Solid	Composite	

Leach Batch: 562606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	1311	562584
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	1311	562584
240-180646-6 MS	WC-WS2-COMP (01-07)	TCLP	Solid	1311	562584

Prep Batch: 562719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	3540C	
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	3540C	
MB 240-562719/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-562719/25-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562719/26-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562719/2-A	Lab Control Sample	Total/NA	Solid	3540C	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

GC/MS Semi VOA

Prep Batch: 562821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	3510C	562606
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	3510C	562606
MB 240-562821/9-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562821/10-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180646-6 MS	WC-WS2-COMP (01-07)	TCLP	Solid	3510C	562606

Prep Batch: 562873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	3540C	
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	3540C	
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	3540C	
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	3540C	
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	3540C	
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	3540C	
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	3540C	
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	3540C	
MB 240-562873/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-562873/2-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562873/3-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562873/4-A	Lab Control Sample	Total/NA	Solid	3540C	
240-180646-3 MS	WC-WS2-03 (2-3)	Total/NA	Solid	3540C	
240-180646-3 MSD	WC-WS2-03 (2-3)	Total/NA	Solid	3540C	

Analysis Batch: 563049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	8270E	562719
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	8270E	562719
MB 240-562719/1-A	Method Blank	Total/NA	Solid	8270E	562719
LCS 240-562719/25-A	Lab Control Sample	Total/NA	Solid	8270E	562719
LCS 240-562719/26-A	Lab Control Sample	Total/NA	Solid	8270E	562719
LCS 240-562719/2-A	Lab Control Sample	Total/NA	Solid	8270E	562719

Analysis Batch: 563114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	8270E	562873
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	8270E	562873
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	8270E	562873
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	8270E	562873
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	8270E	562873
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	8270E	562873
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	8270E	562873
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	8270E	562873
MB 240-562873/1-A	Method Blank	Total/NA	Solid	8270E	562873
LCS 240-562873/2-A	Lab Control Sample	Total/NA	Solid	8270E	562873
LCS 240-562873/3-A	Lab Control Sample	Total/NA	Solid	8270E	562873
LCS 240-562873/4-A	Lab Control Sample	Total/NA	Solid	8270E	562873
240-180646-3 MS	WC-WS2-03 (2-3)	Total/NA	Solid	8270E	562873
240-180646-3 MSD	WC-WS2-03 (2-3)	Total/NA	Solid	8270E	562873

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

GC/MS Semi VOA

Analysis Batch: 563180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	8270E	562821
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	8270E	562821
MB 240-562821/9-A	Method Blank	Total/NA	Solid	8270E	562821
LCS 240-562821/10-A	Lab Control Sample	Total/NA	Solid	8270E	562821
240-180646-6 MS	WC-WS2-COMP (01-07)	TCLP	Solid	8270E	562821

GC Semi VOA

Leach Batch: 346499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	1311	
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	1311	

Prep Batch: 346721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	8151A	346499
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	8151A	346499
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 346737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	8151A	346721
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	8151A	346721
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	346721
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	346721

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	Composite	
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	Composite	
240-180646-12 MS	WC-WS2-COMP (08-14)	TCLP	Solid	Composite	

Composite Batch: 562585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	Composite	
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	Composite	

Leach Batch: 562606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	1311	562584
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	1311	562584
240-180646-12 MS	WC-WS2-COMP (08-14)	TCLP	Solid	1311	562584

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

GC Semi VOA

Prep Batch: 562650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	3546	562585
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	3546	562585
MB 240-562650/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 562759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	8082A	562650
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	8082A	562650
MB 240-562650/1-A	Method Blank	Total/NA	Solid	8082A	562650
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	8082A	562650

Prep Batch: 562822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	3510C	562606
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	3510C	562606
MB 240-562822/6-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562822/7-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180646-12 MS	WC-WS2-COMP (08-14)	TCLP	Solid	3510C	562606

Analysis Batch: 563004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	TCLP	Solid	8081B	562822
240-180646-12	WC-WS2-COMP (08-14)	TCLP	Solid	8081B	562822
MB 240-562822/6-A	Method Blank	Total/NA	Solid	8081B	562822
LCS 240-562822/7-A	Lab Control Sample	Total/NA	Solid	8081B	562822
240-180646-12 MS	WC-WS2-COMP (08-14)	TCLP	Solid	8081B	562822

LCMS

Prep Batch: 346502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	537 (mod)	
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	537 (mod)	
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	

Cleanup Batch: 346507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	Extract Aliquot	346502
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	Extract Aliquot	346502
MB 410-346502/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	346502
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	346502

Analysis Batch: 346558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	537 IDA	346507
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	537 IDA	346507
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 IDA	346507
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	346507

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Metals

Leach Batch: 562607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	TCLP	Solid	1311	
240-180646-2	WC-WS2-02 (1-2)	TCLP	Solid	1311	
240-180646-3	WC-WS2-03 (2-3)	TCLP	Solid	1311	
240-180646-4	WC-WS2-04 (3-4)	TCLP	Solid	1311	
240-180646-5	WC-WS2-05 (2-3)	TCLP	Solid	1311	
240-180646-7	WC-WS2-06 (3-4)	TCLP	Solid	1311	
240-180646-8	WC-WS2-07 (2-3)	TCLP	Solid	1311	
240-180646-9	WC-WS2-08 (4-5)	TCLP	Solid	1311	
240-180646-10	WC-WS2-09 (5-6)	TCLP	Solid	1311	
240-180646-11	WC-WS2-10 (3-4)	TCLP	Solid	1311	
LB 240-562607/1-B	Method Blank	TCLP	Solid	1311	
LB 240-562607/1-C	Method Blank	TCLP	Solid	1311	
240-180646-1 MS	WC-WS2-01 (1-1.5)	TCLP	Solid	1311	
240-180646-1 MSD	WC-WS2-01 (1-1.5)	TCLP	Solid	1311	

Prep Batch: 562706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	TCLP	Solid	3010A	562607
240-180646-2	WC-WS2-02 (1-2)	TCLP	Solid	3010A	562607
240-180646-3	WC-WS2-03 (2-3)	TCLP	Solid	3010A	562607
240-180646-4	WC-WS2-04 (3-4)	TCLP	Solid	3010A	562607
240-180646-5	WC-WS2-05 (2-3)	TCLP	Solid	3010A	562607
240-180646-7	WC-WS2-06 (3-4)	TCLP	Solid	3010A	562607
240-180646-8	WC-WS2-07 (2-3)	TCLP	Solid	3010A	562607
240-180646-9	WC-WS2-08 (4-5)	TCLP	Solid	3010A	562607
240-180646-10	WC-WS2-09 (5-6)	TCLP	Solid	3010A	562607
240-180646-11	WC-WS2-10 (3-4)	TCLP	Solid	3010A	562607
LB 240-562607/1-B	Method Blank	TCLP	Solid	3010A	562607
MB 240-562706/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-562706/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180646-1 MS	WC-WS2-01 (1-1.5)	TCLP	Solid	3010A	562607
240-180646-1 MSD	WC-WS2-01 (1-1.5)	TCLP	Solid	3010A	562607

Prep Batch: 562707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562607
240-180646-2	WC-WS2-02 (1-2)	TCLP	Solid	7470A	562607
240-180646-3	WC-WS2-03 (2-3)	TCLP	Solid	7470A	562607
240-180646-4	WC-WS2-04 (3-4)	TCLP	Solid	7470A	562607
240-180646-5	WC-WS2-05 (2-3)	TCLP	Solid	7470A	562607
240-180646-7	WC-WS2-06 (3-4)	TCLP	Solid	7470A	562607
240-180646-8	WC-WS2-07 (2-3)	TCLP	Solid	7470A	562607
240-180646-9	WC-WS2-08 (4-5)	TCLP	Solid	7470A	562607
240-180646-10	WC-WS2-09 (5-6)	TCLP	Solid	7470A	562607
240-180646-11	WC-WS2-10 (3-4)	TCLP	Solid	7470A	562607
LB 240-562607/1-C	Method Blank	TCLP	Solid	7470A	562607
MB 240-562707/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-562707/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180646-1 MS	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562607
240-180646-1 MSD	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562607

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Metals

Analysis Batch: 562870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	TCLP	Solid	6010D	562706
240-180646-2	WC-WS2-02 (1-2)	TCLP	Solid	6010D	562706
240-180646-3	WC-WS2-03 (2-3)	TCLP	Solid	6010D	562706
240-180646-4	WC-WS2-04 (3-4)	TCLP	Solid	6010D	562706
240-180646-5	WC-WS2-05 (2-3)	TCLP	Solid	6010D	562706
240-180646-7	WC-WS2-06 (3-4)	TCLP	Solid	6010D	562706
240-180646-8	WC-WS2-07 (2-3)	TCLP	Solid	6010D	562706
240-180646-9	WC-WS2-08 (4-5)	TCLP	Solid	6010D	562706
240-180646-10	WC-WS2-09 (5-6)	TCLP	Solid	6010D	562706
240-180646-11	WC-WS2-10 (3-4)	TCLP	Solid	6010D	562706
LB 240-562607/1-B	Method Blank	TCLP	Solid	6010D	562706
MB 240-562706/2-A	Method Blank	Total/NA	Solid	6010D	562706
LCS 240-562706/3-A	Lab Control Sample	Total/NA	Solid	6010D	562706
240-180646-1 MS	WC-WS2-01 (1-1.5)	TCLP	Solid	6010D	562706
240-180646-1 MSD	WC-WS2-01 (1-1.5)	TCLP	Solid	6010D	562706

Analysis Batch: 562913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562707
240-180646-2	WC-WS2-02 (1-2)	TCLP	Solid	7470A	562707
240-180646-3	WC-WS2-03 (2-3)	TCLP	Solid	7470A	562707
240-180646-4	WC-WS2-04 (3-4)	TCLP	Solid	7470A	562707
240-180646-5	WC-WS2-05 (2-3)	TCLP	Solid	7470A	562707
240-180646-7	WC-WS2-06 (3-4)	TCLP	Solid	7470A	562707
240-180646-8	WC-WS2-07 (2-3)	TCLP	Solid	7470A	562707
240-180646-9	WC-WS2-08 (4-5)	TCLP	Solid	7470A	562707
240-180646-10	WC-WS2-09 (5-6)	TCLP	Solid	7470A	562707
240-180646-11	WC-WS2-10 (3-4)	TCLP	Solid	7470A	562707
LB 240-562607/1-C	Method Blank	TCLP	Solid	7470A	562707
MB 240-562707/2-A	Method Blank	Total/NA	Solid	7470A	562707
LCS 240-562707/3-A	Lab Control Sample	Total/NA	Solid	7470A	562707
240-180646-1 MS	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562707
240-180646-1 MSD	WC-WS2-01 (1-1.5)	TCLP	Solid	7470A	562707

General Chemistry

Analysis Batch: 562608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-1	WC-WS2-01 (1-1.5)	Total/NA	Solid	Moisture	
240-180646-2	WC-WS2-02 (1-2)	Total/NA	Solid	Moisture	
240-180646-3	WC-WS2-03 (2-3)	Total/NA	Solid	Moisture	
240-180646-4	WC-WS2-04 (3-4)	Total/NA	Solid	Moisture	
240-180646-5	WC-WS2-05 (2-3)	Total/NA	Solid	Moisture	
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	Moisture	
240-180646-7	WC-WS2-06 (3-4)	Total/NA	Solid	Moisture	
240-180646-8	WC-WS2-07 (2-3)	Total/NA	Solid	Moisture	
240-180646-9	WC-WS2-08 (4-5)	Total/NA	Solid	Moisture	
240-180646-10	WC-WS2-09 (5-6)	Total/NA	Solid	Moisture	
240-180646-11	WC-WS2-10 (3-4)	Total/NA	Solid	Moisture	
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	Moisture	
240-180646-1 DU	WC-WS2-01 (1-1.5)	Total/NA	Solid	Moisture	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

General Chemistry (Continued)

Analysis Batch: 562608 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-10 DU	WC-WS2-09 (5-6)	Total/NA	Solid	Moisture	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-01 (1-1.5)

Date Collected: 02/18/23 15:55

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 09:54
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:39
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-01 (1-1.5)

Date Collected: 02/18/23 15:55

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-1

Matrix: Solid

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/23/23 22:27
Total/NA	Prep	5035			562783	LAM	EET CAN	02/20/23 16:48
Total/NA	Analysis	8260D		50	563303	CS	EET CAN	02/24/23 18:11
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		25	563049	JMG	EET CAN	02/22/23 17:39

Client Sample ID: WC-WS2-02 (1-2)

Date Collected: 02/18/23 16:10

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 09:58
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:46
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-02 (1-2)

Date Collected: 02/18/23 16:10

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-2

Matrix: Solid

Percent Solids: 79.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/23/23 23:40
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		50	563303	CS	EET CAN	02/24/23 12:29
Total/NA	Prep	3540C			562719	BMB	EET CAN	02/20/23 10:04
Total/NA	Analysis	8270E		25	563049	JMG	EET CAN	02/22/23 18:03

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:03
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:48
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-03 (2-3)

Lab Sample ID: 240-180646-3

Date Collected: 02/18/23 16:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563099	SAM	EET CAN	02/23/23 17:59
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		50	563303	CS	EET CAN	02/24/23 12:50
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 11:30

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:07
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:50
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-04 (3-4)

Lab Sample ID: 240-180646-4

Date Collected: 02/18/23 16:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 00:28
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		100	563103	CS	EET CAN	02/23/23 10:10
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 12:48

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:12
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:52
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-05 (2-3)

Lab Sample ID: 240-180646-5

Date Collected: 02/18/23 16:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 00:53
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		100	563303	CS	EET CAN	02/24/23 13:12
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 13:14

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562615	DRJ	EET CAN	02/19/23 16:35 - 02/20/23 08:55 ¹
TCLP	Analysis	8260D		1	562664	HMB	EET CAN	02/20/23 19:54
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562821	SDE	EET CAN	02/21/23 08:07
TCLP	Analysis	8270E		1	563180	JMG	EET CAN	02/23/23 14:40
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562822	SDE	EET CAN	02/21/23 08:09
TCLP	Analysis	8081B		1	563004	BPM	EET CAN	02/22/23 11:32
TCLP	Leach	1311			346499	UNWS	ELLE	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 08:41
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562585	DRJ	EET CAN	02/19/23 10:38
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 01:31
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 17:33

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:16
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 10:59
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-06 (3-4)

Lab Sample ID: 240-180646-7

Date Collected: 02/18/23 16:52

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 76.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 01:17
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 13:34
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 13:39

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:21
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:01
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-07 (2-3)

Lab Sample ID: 240-180646-8

Date Collected: 02/18/23 17:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 79.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 01:41
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 13:55
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 14:05

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:25
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:03
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-08 (4-5)

Lab Sample ID: 240-180646-9

Date Collected: 02/18/23 17:10

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 02:06
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 14:16
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 14:31

Client Sample ID: WC-WS2-09 (5-6)

Lab Sample ID: 240-180646-10

Date Collected: 02/18/23 17:20

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:29
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:05
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-09 (5-6)

Date Collected: 02/18/23 17:20

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-10

Matrix: Solid

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 02:30
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 14:38
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 14:57

Client Sample ID: WC-WS2-10 (3-4)

Date Collected: 02/18/23 17:28

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:42
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:07
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-10 (3-4)

Date Collected: 02/18/23 17:28

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-11

Matrix: Solid

Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 02:54
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 14:59
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563114	MRU	EET CAN	02/23/23 15:23

Client Sample ID: WC-WS2-COMP (08-14)

Date Collected: 02/18/23 00:00

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180646-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562615	DRJ	EET CAN	02/19/23 16:35 - 02/20/23 08:55 ¹
TCLP	Analysis	8260D		1	562664	HMB	EET CAN	02/20/23 20:17
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562821	SDE	EET CAN	02/21/23 08:07
TCLP	Analysis	8270E		2.5	563180	JMG	EET CAN	02/23/23 15:52

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562822	SDE	EET CAN	02/21/23 08:09
TCLP	Analysis	8081B		1	563004	BPM	EET CAN	02/22/23 11:44
TCLP	Leach	1311			346499	UNWS	ELLE	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 09:09
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562585	DRJ	EET CAN	02/19/23 10:38
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 01:47
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 17:44

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

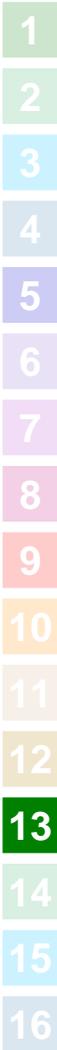
Job ID: 240-180646-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

645237  eurofins

Environment Testing
America

TAL-8210

Address:

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager:		Site Contact:		Date:		COC No.:	
Company Name: <u>ARCADIP</u>		Tel/Email:		Lab Contact: <u>MICK DELMONACO</u>		Carrier:		COCs	
Address: <u>55 Monument Creek Ste 300B</u>		Analysis Turnaround Time		Perform MS/MSD (Y/N)		Filtered Sample (Y/N)		Sampler:	
City/State/Zip: <u>Indianapolis, IN 46203</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		TAT if different from Below		Total VOC		For Lab Use Only:	
Phone:		2 weeks		2 weeks		Total SVOC		Walk-in Client:	
Fax:		1 week		1 week		Total PCBs		Lab Sampling:	
Project Name: <u>Norfolk Southern</u>		2 days		2 days		Total PCBs		Job/SDG No.:	
Site: <u>E. Palestine, OH</u>		1 day		1 day		Total PCBs		Sample Specific Notes:	
PO #								LAB TO GENERATE COMPOSITE	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Lab Sampling	Job/SDG No.
WC-WS2-01 (1-1.5)	2/18/23	1555	G	S	7	N	N		
WC-WS2-02 (1-2)	2/18/23	1610	G	S	7	N	N		
WC-WS2-03 (2-3)	2/18/23	1615	G	S	7	N	N		
WC-WS2-04 (3-4)	2/18/23	1630	G	S	7	N	N		
WC-WS2-05 (2-3)	2/18/23	1635	G	S	7	N	N		
WC-WS2-Comp (01-07)	2/18/23	-	LAB Comp	S	X	N	N		
WC-WS2-06 (3-4)	2/18/23	1652	G	S	7	N	N		
WC-WS2-07 (2-3)	2/18/23	1700	G	S	7	N	N		
WC-WS2-08 (4-5)	2/18/23	1710	G	S	7	N	N		
WC-WS2-09 (5-6)	2/18/23	1720	G	S	7	N	N		
WC-WS2-2-10 (3-4)	2/18/23	1728	G	S	7	N	N		
WC-WS2-Comp (08-14)	2/18/23	-	LAB Comp	S	X	N	N		



240-180646 Chain of Custody

LAB TO GENERATE COMPOSITE

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Therm ID No.: _____

Company: GETNL

Date/Time: 2-18-23 1905

Received by: [Signature]

Received in Laboratory by: _____

Date/Time: _____



Barberton Facility

Client Arcadis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-18-23 Opened on 2-18-23

me

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
- IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
- IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
- IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
- Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
- Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
- Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? Yes No NA ➔ Larger than this.
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180646-1

Login Number: 180646

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		C8PFOA (26-159)	C8PFOS (41-154)
240-180646-6	WC-WS2-COMP (01-07)	74	84
240-180646-12	WC-WS2-COMP (08-14)	69	82
LCS 410-346502/2-B	Lab Control Sample	85	91
MB 410-346502/1-B	Method Blank	74	89

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/10/2023 9:31:14 AM Revision 1

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180646-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/10/2023 9:31:14 AM
Revision 1

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	11
QC Association Summary	13
Lab Chronicle	14
Certification Summary	15
Chain of Custody	17
Receipt Checklists	20
Isotope Dilution Summary	21

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Job ID: 240-180646-2

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-180646-2**

Receipt

The samples were received on 2/18/2023 7:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.4°C, 3.6°C and 4.4°C

Report revised on 3/10/2023 to report Total Dioxins calculations.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180646-6	WC-WS2-COMP (01-07)	Solid	02/18/23 00:00	02/18/23 19:05
240-180646-12	WC-WS2-COMP (08-14)	Solid	02/18/23 00:00	02/18/23 19:05

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-2

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	110		5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	14		5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	2.9	J	5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	0.77	J	1.2	0.24	ng/Kg	1	✳	8290A	Total/NA
OCDD	1100		12	2.4	ng/Kg	1	✳	8290A	Total/NA
OCDF	48		12	2.4	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	53		5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	24	I	5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	360		5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	43	I	5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	12	I	5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	13	I	5.9	2.4	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	9.8	I	1.2	0.24	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	14	I	1.2	0.24	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	110		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	20		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	3.1	J	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	3.2	J	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	2.6	J	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	2.8	J	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	0.96	J	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
OCDD	1100		12	2.5	ng/Kg	1	✳	8290A	Total/NA
OCDF	51		12	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	50		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	30		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	340		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	52		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	14	I	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	19	I	6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	9.8	I	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	21	I	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	110		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,4,6,7,8-HpCDF	14		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,4,7,8-HxCDD	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,4,7,8-HxCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,4,7,8,9-HpCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,6,7,8-HxCDD	2.9	J	5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,6,7,8-HxCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,7,8-PeCDD	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,7,8-PeCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,7,8,9-HxCDD	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
1,2,3,7,8,9-HxCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
2,3,4,6,7,8-HxCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
2,3,4,7,8-PeCDF	ND		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
2,3,7,8-TCDD	ND		1.2	0.24	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
2,3,7,8-TCDF	0.77	J	1.2	0.24	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
OCDD	1100		12	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
OCDF	48		12	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total HxCDD	53		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total HxCDF	24	I	5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total HpCDD	360		5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total HpCDF	43	I	5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total PeCDD	12	I	5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total PeCDF	13	I	5.9	2.4	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total TCDD	9.8	I	1.2	0.24	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1
Total TCDF	14	I	1.2	0.24	ng/Kg	☆	03/06/23 12:43	03/08/23 01:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	65		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-OCDD	67		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-2,3,7,8-TCDF	69		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-2,3,7,8-TCDD	65		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-2,3,4,7,8-PeCDF	66		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-2,3,4,6,7,8-HxCDF	65		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,7,8,9-HxCDF	65		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,7,8,9-HxCDD	65		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,7,8-PeCDF	64		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,7,8-PeCDD	62		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,6,7,8-HxCDF	68		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,6,7,8-HxCDD	64		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,4,7,8,9-HpCDF	68		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,4,7,8-HxCDF	68		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,4,7,8-HxCDD	61		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,4,6,7,8-HpCDF	68		40 - 135	03/06/23 12:43	03/08/23 01:09	1
13C-1,2,3,4,6,7,8-HpCDD	66		40 - 135	03/06/23 12:43	03/08/23 01:09	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 80.9

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	110		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,4,6,7,8-HpCDF	20		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,4,7,8-HxCDD	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,4,7,8-HxCDF	3.1	J	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,4,7,8,9-HpCDF	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,6,7,8-HxCDD	3.2	J	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,6,7,8-HxCDF	2.6	J	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,7,8-PeCDD	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,7,8-PeCDF	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,7,8,9-HxCDD	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
1,2,3,7,8,9-HxCDF	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
2,3,4,6,7,8-HxCDF	ND		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
2,3,4,7,8-PeCDF	2.8	J	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
2,3,7,8-TCDD	ND		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
2,3,7,8-TCDF	0.96	J	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
OCDD	1100		12	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
OCDF	51		12	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total HxCDD	50		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total HxCDF	30		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total HpCDD	340		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total HpCDF	52		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total PeCDD	14	I	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total PeCDF	19	I	6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total TCDD	9.8	I	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1
Total TCDF	21	I	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 01:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	68		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-OCDD	69		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-2,3,7,8-TCDF	69		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-2,3,7,8-TCDD	69		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-2,3,4,7,8-PeCDF	66		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-2,3,4,6,7,8-HxCDF	74		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,7,8,9-HxCDF	75		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,7,8,9-HxCDD	74		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,7,8-PeCDF	66		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,7,8-PeCDD	62		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,6,7,8-HxCDF	71		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,6,7,8-HxCDD	73		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,4,7,8,9-HpCDF	71		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,4,7,8-HxCDF	70		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,4,7,8-HxCDD	72		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,4,6,7,8-HpCDF	72		40 - 135	03/06/23 12:43	03/08/23 01:59	1
13C-1,2,3,4,6,7,8-HpCDD	74		40 - 135	03/06/23 12:43	03/08/23 01:59	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-350542/1-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350542

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,6,7,8-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8,9-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDD	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDF	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-OCDF	89		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-OCDD	88		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDD	68		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,6,7,8-HxCDF	81		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDD	83		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDD	69		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8,9-HpCDF	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDD	78		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-350542/2-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDD	100	93.6		ng/Kg		94	77 - 127
1,2,3,4,6,7,8-HpCDF	100	94.3		ng/Kg		94	77 - 127
1,2,3,4,7,8-HxCDD	100	98.7		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDF	100	97.8		ng/Kg		98	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.8		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	103		ng/Kg		103	76 - 127
1,2,3,6,7,8-HxCDF	100	97.3		ng/Kg		97	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	101		ng/Kg		101	75 - 129
1,2,3,7,8,9-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,7,8,9-HxCDF	100	97.4		ng/Kg		97	76 - 126
2,3,4,6,7,8-HxCDF	100	94.2		ng/Kg		94	78 - 128
2,3,4,7,8-PeCDF	100	104		ng/Kg		104	75 - 131
2,3,7,8-TCDD	20.0	19.9		ng/Kg		99	68 - 142
2,3,7,8-TCDF	20.0	17.7		ng/Kg		88	70 - 133
OCDD	200	202		ng/Kg		101	77 - 125
OCDF	200	199		ng/Kg		99	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	91		40 - 135
13C-OCDD	92		40 - 135
13C-2,3,7,8-TCDF	75		40 - 135
13C-2,3,7,8-TCDD	72		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-2,3,4,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDD	89		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	92		40 - 135
13C-1,2,3,4,7,8-HxCDF	83		40 - 135
13C-1,2,3,4,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	91		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	90		40 - 135

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Specialty Organics

Prep Batch: 350542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	HRMS-Soxtherm	
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-350542/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 350921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-350542/1-A	Method Blank	Total/NA	Solid	8290A	350542
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	8290A	350542

Analysis Batch: 351132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180646-6	WC-WS2-COMP (01-07)	Total/NA	Solid	8290A	350542
240-180646-12	WC-WS2-COMP (08-14)	Total/NA	Solid	8290A	350542

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Client Sample ID: WC-WS2-COMP (01-07)

Lab Sample ID: 240-180646-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/08/23 01:09

Client Sample ID: WC-WS2-COMP (08-14)

Lab Sample ID: 240-180646-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/08/23 01:59

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180646-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Chain of Custody Record

645237  eurofins

Environment Testing
America

TAL-8210

Address: _____

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact		Project Manager:		Site Contact:		Date:	
Company Name: <u>ARCADIP</u>		Tel/Email: _____		Lab Contact: <u>MICK DELMONACO</u>		Carrier: _____	
Address: <u>55 Monument Creek Ste 300B</u>		Analysis Turnaround Time		COC No: <u>5</u> of _____		COCs	
City/State/Zip: <u>Indianapolis, IN 46203</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Sampler: _____		For Lab Use Only:	
Phone: _____		TAT if different from Below <u>RUSH</u>		Walk-in Client: _____		Lab Sampling: _____	
Fax: _____		2 weeks		Job / SDG No.: _____		Sample Specific Notes:	
Project Name: <u>Norfolk Southern</u>		1 week		Filtered Sample (Y/N)		LAB TO GENERATE COMPOSITE	
Site: <u>E. Palestine, OH</u>		2 days		Perform MS/MSD (Y/N)		240-180646 Chain of Custody	
PO # _____		1 day		Total VOC		LAB TO GENERATE COMPOSITE	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	
WC-WS2-01 (1-1.5)	2/18/23	1555	G	S		7	
WC-WS2-02 (1-2)	2/18/23	1610	G	S		7	
WC-WS2-03 (2-3)	2/18/23	1615	G	S		7	
WC-WS2-04 (3-4)	2/18/23	1630	G	S		7	
WC-WS2-05 (2-3)	2/18/23	1635	G	S		7	
WC-WS2-Comp (01-07)	2/18/23	-	LAB Comp	S		X	
WC-WS2-06 (3-4)	2/18/23	1652	G	S		7	
WC-WS2-07 (2-3)	2/18/23	1700	G	S		7	
WC-WS2-08 (4-5)	2/18/23	1710	G	S		7	
WC-WS2-09 (5-6)	2/18/23	1720	G	S		7	
WC-WS2-10 (3-4)	2/18/23	1728	G	S		7	
WC-WS2-Comp (08-14)	2/18/23	-	LAB Comp	S		X	
<p>Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other</p> <p>Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <u>None BUTYL ALYLIC</u></p> <p><input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Unknown</p> <p>Special Instructions/QC Requirements & Comments: <u>LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 5 GRAB SAMPLES</u></p>							
Custody Seal No.: _____		Cooler Temp. (°C): _____		Obs'd: _____		Therm ID No.: _____	
Relinquished by: _____		Company: _____		Date/Time: _____		Date/Time: _____	
Relinquished by: _____		Company: _____		Date/Time: _____		Date/Time: _____	
Relinquished by: _____		Company: _____		Date/Time: _____		Date/Time: _____	



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Barberton Facility

Client Arcadis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-18-23 Opened on 2-18-23

me

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180646-2

Login Number: 180646

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180646-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-180646-6	WC-WS2-COMP (01-07)	65	67	69	65	66	65	65	65
240-180646-12	WC-WS2-COMP (08-14)	68	69	69	69	66	74	75	74
LCS 410-350542/2-A	Lab Control Sample	91	92	75	72	77	87	87	89
MB 410-350542/1-A	Method Blank	89	88	72	68	76	81	82	83

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-180646-6	WC-WS2-COMP (01-07)	64	62	68	64	68	68	61	68
240-180646-12	WC-WS2-COMP (08-14)	66	62	71	73	71	70	72	72
LCS 410-350542/2-A	Lab Control Sample	76	70	87	84	92	83	84	91
MB 410-350542/1-A	Method Blank	72	69	84	80	86	79	78	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-180646-6	WC-WS2-COMP (01-07)	66
240-180646-12	WC-WS2-COMP (08-14)	74
LCS 410-350542/2-A	Lab Control Sample	90
MB 410-350542/1-A	Method Blank	86

Surrogate Legend

OCDF = 13C-OCDF
 OCDD = 13C-OCDD
 TCDF = 13C-2,3,7,8-TCDF
 TCDD = 13C-2,3,7,8-TCDD
 PeCF = 13C-2,3,4,7,8-PeCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/25/2023 12:18:12 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180647-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/25/2023 12:18:12 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	13
Surrogate Summary	59
QC Sample Results	63
QC Association Summary	82
Lab Chronicle	89
Certification Summary	96
Chain of Custody	98
Receipt Checklists	102
Isotope Dilution Summary	103

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Job ID: 240-180647-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180647-1

Receipt

The samples were received on 2/18/2023 7:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.6°C and 4.6°C

GC/MS VOA

Method 8260D: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-WS1-B1 (5-6) (240-180647-1), WC-WS1-B2 (3-4) (240-180647-2), WC-WS1-B3 (3-4) (240-180647-3), WC-WS1-B4 (4-5) (240-180647-4), WC-WS1-B5 (2-3) (240-180647-5), WC-WS1-B6 (4-5) (240-180647-7), WC-WS1-B7 (5-6) (240-180647-8), WC-WS1-B8 (4-5) (240-180647-9), WC-WS1-B9 (5-6) (240-180647-10), WC-WS1-B10 (3-4) (240-180647-11), (240-180647-C-11 MS) and (240-180647-C-11 MSD).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563103 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563303 was outside the method criteria for the following analytes: Carbon disulfide, Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-562918 and analytical batch 240-563103 is not reported because of high analyte concentrations in the parent sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The following sample was diluted due to the nature of the sample matrix: WC-WS1-COMP (B1-B5) (240-180647-6). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563180 recovered outside acceptance criteria, low biased, for Pyridine. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples: WC-WS1-COMP (B1-B5) (240-180647-6) and WC-WS1-COMP (B6-B10) (240-180647-12) were non-detect for the analyte, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-WS1-COMP (B1-B5) (240-180647-6) and WC-WS1-COMP (B6-B10) (240-180647-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides

Method 8081B: The continuing calibration verification (CCV) associated with batch 240-563004 was outside %D criteria for the individual peaks 4 and 5 used for the quantitation of Toxaphene. The average %D is in control for this analyte and samples associated with this CCV were non-detects for the affected analyte; therefore, corrective action was not performed. The associated samples are impacted:

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Job ID: 240-180647-1 (Continued)

Laboratory: Eurofins Canton (Continued)

WC-WS1-COMP (B1-B5) (240-180647-6), WC-WS1-COMP (B6-B10) (240-180647-12) and (240-180646-A-12-G).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180647-1	WC-WS1-B1 (5-6)	Solid	02/18/23 13:15	02/18/23 19:05
240-180647-2	WC-WS1-B2 (3-4)	Solid	02/18/23 13:35	02/18/23 19:05
240-180647-3	WC-WS1-B3 (3-4)	Solid	02/18/23 13:45	02/18/23 19:05
240-180647-4	WC-WS1-B4 (4-5)	Solid	02/18/23 14:00	02/18/23 19:05
240-180647-5	WC-WS1-B5 (2-3)	Solid	02/18/23 14:05	02/18/23 19:05
240-180647-6	WC-WS1-COMP (B1-B5)	Solid	02/18/23 00:00	02/18/23 19:05
240-180647-7	WC-WS1-B6 (4-5)	Solid	02/18/23 14:15	02/18/23 19:05
240-180647-8	WC-WS1-B7 (5-6)	Solid	02/18/23 14:25	02/18/23 19:05
240-180647-9	WC-WS1-B8 (4-5)	Solid	02/18/23 14:30	02/18/23 19:05
240-180647-10	WC-WS1-B9 (5-6)	Solid	02/18/23 14:45	02/18/23 19:05
240-180647-11	WC-WS1-B10 (3-4)	Solid	02/18/23 14:55	02/18/23 19:05
240-180647-12	WC-WS1-COMP (B6-B10)	Solid	02/18/23 00:00	02/18/23 19:05



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Lab Sample ID: 240-180647-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	8.6		0.31	0.15	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.9		0.38	0.049	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.33	J	0.38	0.072	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.32	J	0.38	0.060	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.56		0.38	0.085	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.36	J	0.38	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.61		0.38	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.24	J	0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.26	J	0.38	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.82		0.38	0.037	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.73	J	1.3	0.33	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	1.4		0.38	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.32	J	0.38	0.069	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.19	J	0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.3		0.38	0.060	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.0		0.38	0.056	mg/Kg	20	✳	8270E	Total/NA
Pyrene	1.2		0.38	0.054	mg/Kg	20	✳	8270E	Total/NA
Barium	0.60	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0086	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.16	J	0.23	0.11	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.2		0.35	0.046	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.22	J	0.35	0.067	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.19	J	0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.35		0.35	0.080	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.23	J	0.35	0.22	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.39		0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.18	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.37		0.35	0.035	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.49	J	1.2	0.31	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.90		0.35	0.10	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.22	J	0.35	0.064	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.77		0.35	0.057	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	1.3		0.35	0.052	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.74		0.35	0.050	mg/Kg	20	✳	8270E	Total/NA
Barium	0.54	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0020	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.25		0.25	0.12	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.6	J	3.6	0.47	mg/Kg	200	✳	8270E	Total/NA
Naphthalene	1.1	J	3.6	0.58	mg/Kg	200	✳	8270E	Total/NA
Phenanthrene	1.3	J	3.6	0.54	mg/Kg	200	✳	8270E	Total/NA
Barium	0.46	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J B	0.050	0.00020	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B3 (3-4) (Continued)

Lab Sample ID: 240-180647-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0097	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	12		0.37	0.18	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.8	J	2.1	0.27	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	0.78	J	2.1	0.61	mg/Kg	100	✳	8270E	Total/NA
Naphthalene	1.2	J	2.1	0.33	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	1.4	J	2.1	0.31	mg/Kg	100	✳	8270E	Total/NA
Pyrene	0.76	J	2.1	0.29	mg/Kg	100	✳	8270E	Total/NA
Barium	0.51	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	7.0		0.31	0.15	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.3		0.88	0.11	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	0.34	J	0.88	0.20	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.38	J	0.88	0.38	mg/Kg	50	✳	8270E	Total/NA
Chrysene	0.46	J	0.88	0.087	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	0.77	J	0.88	0.26	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	0.96		0.88	0.14	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	1.1		0.88	0.13	mg/Kg	50	✳	8270E	Total/NA
Pyrene	0.70	J	0.88	0.13	mg/Kg	50	✳	8270E	Total/NA
Barium	0.48	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0097	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L	1		8260D	TCLP
Vinyl chloride	0.27		0.025	0.00045	mg/L	1		8260D	TCLP

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	19		0.34	0.17	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.3	J	2.0	0.26	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	0.96	J	2.0	0.58	mg/Kg	100	✳	8270E	Total/NA
Naphthalene	0.96	J	2.0	0.31	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	1.3	J	2.0	0.29	mg/Kg	100	✳	8270E	Total/NA
Pyrene	0.87	J	2.0	0.28	mg/Kg	100	✳	8270E	Total/NA
Barium	0.52	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0017	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0096	J	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	17		0.69	0.34	mg/Kg	2.5	✳	8260D	Total/NA
2-Methylnaphthalene	1.7		0.45	0.059	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.20	J	0.45	0.085	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.19	J	0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.38	J	0.45	0.10	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.42	J	0.45	0.19	mg/Kg	25	✳	8270E	Total/NA
Chrysene	0.46		0.45	0.044	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	0.60	J	1.5	0.39	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	0.91		0.45	0.13	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.20	J	0.45	0.082	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	1.1		0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	1.4		0.45	0.067	mg/Kg	25	✳	8270E	Total/NA
Pyrene	0.85		0.45	0.064	mg/Kg	25	✳	8270E	Total/NA
Barium	0.56	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.010	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	4.0		0.27	0.13	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	2.0		0.45	0.059	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.16	J	0.45	0.086	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.18	J	0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.46		0.45	0.10	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.31	J	0.45	0.28	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.50		0.45	0.19	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.23	J	0.45	0.21	mg/Kg	25	✳	8270E	Total/NA
Chrysene	0.62		0.45	0.045	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	0.63	J	1.5	0.39	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	0.86		0.45	0.13	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.17	J	0.45	0.082	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	1.3		0.45	0.072	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	1.4		0.45	0.067	mg/Kg	25	✳	8270E	Total/NA
Pyrene	0.91		0.45	0.064	mg/Kg	25	✳	8270E	Total/NA
Arsenic	0.0048	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.59	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0092	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	4.0		0.35	0.17	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	2.0		0.51	0.067	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.58		0.51	0.098	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.75		0.51	0.082	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	0.82		0.51	0.12	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	0.34	J	0.51	0.32	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.61		0.51	0.22	mg/Kg	25	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.24	J	0.51	0.24	mg/Kg	25	✳	8270E	Total/NA
Chrysene	1.0		0.51	0.051	mg/Kg	25	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6) (Continued)

Lab Sample ID: 240-180647-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dibenzofuran	0.96	J	1.7	0.44	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	2.5		0.51	0.15	mg/Kg	25	✳	8270E	Total/NA
Fluorene	0.89		0.51	0.094	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	1.2		0.51	0.082	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	4.4		0.51	0.076	mg/Kg	25	✳	8270E	Total/NA
Pyrene	2.3		0.51	0.073	mg/Kg	25	✳	8270E	Total/NA
Barium	0.66	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00063	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0099	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	7.8		0.31	0.15	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.94		0.38	0.050	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.091	J	0.38	0.073	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.12	J	0.38	0.062	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	0.23	J	0.38	0.087	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.23	J	0.38	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.26	J	0.38	0.038	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.37	J	1.3	0.33	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.47		0.38	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.13	J	0.38	0.070	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.55		0.38	0.062	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	0.94		0.38	0.057	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.47		0.38	0.055	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0044	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.55	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0096	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.44		0.025	0.00045	mg/L	1		8260D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Lab Sample ID: 240-180647-1

Date Collected: 02/18/23 13:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		310	96	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,1,2,2-Tetrachloroethane	ND		310	180	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		310	82	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,1,2-Trichloroethane	ND		310	70	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,1-Dichloroethane	ND		310	59	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,1-Dichloroethene	ND		310	100	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,2,4-Trichlorobenzene	ND		310	160	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,2-Dibromo-3-Chloropropane	ND		620	270	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Ethylene Dibromide	ND		310	97	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,2-Dichlorobenzene	ND		310	150	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,2-Dichloroethane	ND		310	58	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,2-Dichloropropane	ND		310	46	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,3-Dichlorobenzene	ND		310	57	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
1,4-Dichlorobenzene	ND		310	68	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
2-Butanone (MEK)	ND		1200	190	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
2-Hexanone	ND		1200	320	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
4-Methyl-2-pentanone (MIBK)	ND		1200	290	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Acetone	ND		1200	300	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Benzene	ND		310	52	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Dichlorobromomethane	ND		310	75	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Bromoform	ND		310	280	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Bromomethane	ND		310	200	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Carbon disulfide	ND		310	130	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Carbon tetrachloride	ND		310	130	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Chlorobenzene	ND		310	43	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Chloroethane	ND		310	180	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Chloroform	ND		310	66	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Chloromethane	ND		310	81	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
cis-1,2-Dichloroethene	ND		310	49	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
cis-1,3-Dichloropropene	ND		310	150	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Cyclohexane	ND		620	200	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Chlorodibromomethane	ND		310	140	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Dichlorodifluoromethane	ND		310	65	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Ethylbenzene	ND		310	58	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Isopropylbenzene	ND		310	47	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Methyl acetate	ND		1500	210	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Methyl tert-butyl ether	ND		310	46	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Methylcyclohexane	ND		620	81	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Methylene Chloride	ND		620	470	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Styrene	ND		310	64	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Tetrachloroethene	ND		310	120	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Toluene	ND		310	300	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
trans-1,2-Dichloroethene	ND		310	76	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
trans-1,3-Dichloropropene	ND		310	130	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Trichloroethene	ND		310	180	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Trichlorofluoromethane	ND		310	170	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000
Vinyl chloride	8.6		0.31	0.15	mg/Kg	✱	02/21/23 13:30	02/24/23 03:18	1
Xylenes, Total	ND		620	110	mg/Kg	✱	02/21/23 13:30	02/23/23 12:41	1000

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Lab Sample ID: 240-180647-1

Date Collected: 02/18/23 13:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/23/23 12:41	1000
Toluene-d8 (Surr)	96		56 - 125	02/21/23 13:30	02/24/23 03:18	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/23/23 12:41	1000
Dibromofluoromethane (Surr)	110		41 - 138	02/21/23 13:30	02/24/23 03:18	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/21/23 13:30	02/23/23 12:41	1000
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/24/23 03:18	1
1,2-Dichloroethane-d4 (Surr)	83		58 - 125	02/21/23 13:30	02/23/23 12:41	1000
1,2-Dichloroethane-d4 (Surr)	118		58 - 125	02/21/23 13:30	02/24/23 03:18	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.43	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4,5-Trichlorophenol	ND		3.8	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4,6-Trichlorophenol	ND		3.8	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4-Dichlorophenol	ND		3.8	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4-Dimethylphenol	ND		3.8	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4-Dinitrophenol	ND		8.3	3.6	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,4-Dinitrotoluene	ND		5.0	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Chloronaphthalene	ND		1.3	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Chlorophenol	ND		1.3	0.25	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Methylnaphthalene	1.9		0.38	0.049	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Methylphenol	ND		5.0	0.78	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Nitroaniline	ND		5.0	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
2-Nitrophenol	ND		1.3	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4,6-Dinitro-2-methylphenol	ND		8.3	2.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Bromophenyl phenyl ether	ND		1.3	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Chloro-3-methylphenol	ND		3.8	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Chloroaniline	ND		3.8	0.75	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Chlorophenyl phenyl ether	ND		1.3	0.35	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
4-Nitrophenol	ND		8.3	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Acenaphthene	0.33	J	0.38	0.072	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Acenaphthylene	ND		0.38	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Acetophenone	ND		2.5	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Anthracene	0.32	J	0.38	0.060	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Atrazine	ND		5.0	0.90	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzaldehyde	ND		2.5	0.58	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzo[a]anthracene	0.56		0.38	0.085	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzo[a]pyrene	0.36	J	0.38	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzo[b]fluoranthene	0.61		0.38	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzo[g,h,i]perylene	0.24	J	0.38	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Benzo[k]fluoranthene	0.26	J	0.38	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20
Butyl benzyl phthalate	ND		1.8	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 12:16	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Lab Sample ID: 240-180647-1

Date Collected: 02/18/23 13:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.3	1.9	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Carbazole	ND		1.3	0.48	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Chrysene	0.82		0.38	0.037	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Dibenz(a,h)anthracene	ND		0.38	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Dibenzofuran	0.73	J	1.3	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Diethyl phthalate	ND		1.8	0.78	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Dimethyl phthalate	ND		1.8	0.35	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Di-n-octyl phthalate	ND		1.8	0.70	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Fluoranthene	1.4		0.38	0.11	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Fluorene	0.32	J	0.38	0.069	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Hexachlorobenzene	ND		0.38	0.071	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Hexachlorobutadiene	ND		1.3	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Hexachlorocyclopentadiene	ND		8.3	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Indeno[1,2,3-cd]pyrene	0.19	J	0.38	0.18	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Isophorone	ND		1.3	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
N-Nitrosodiphenylamine	ND		1.3	0.30	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Naphthalene	1.3		0.38	0.060	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Nitrobenzene	ND		2.5	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Pentachlorophenol	ND		3.8	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Phenanthrene	2.0		0.38	0.056	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Phenol	ND		1.3	0.20	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
Pyrene	1.2		0.38	0.054	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20
3 & 4 Methylphenol	ND		10	0.73	mg/Kg	✳	02/21/23 09:46	02/23/23 12:16	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	02/21/23 09:46	02/23/23 12:16	20
Phenol-d5 (Surr)	66		26 - 120	02/21/23 09:46	02/23/23 12:16	20
Nitrobenzene-d5 (Surr)	42		25 - 120	02/21/23 09:46	02/23/23 12:16	20
2-Fluorophenol (Surr)	53		20 - 120	02/21/23 09:46	02/23/23 12:16	20
2-Fluorobiphenyl (Surr)	58		34 - 120	02/21/23 09:46	02/23/23 12:16	20
2,4,6-Tribromophenol (Surr)	47		10 - 120	02/21/23 09:46	02/23/23 12:16	20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	71		46 - 137	02/21/23 09:46	02/23/23 16:10	100
Phenol-d5 (Surr)	77		26 - 120	02/21/23 09:46	02/23/23 16:10	100
Nitrobenzene-d5 (Surr)	55		25 - 120	02/21/23 09:46	02/23/23 16:10	100
2-Fluorophenol (Surr)	62		20 - 120	02/21/23 09:46	02/23/23 16:10	100
2-Fluorobiphenyl (Surr)	63		34 - 120	02/21/23 09:46	02/23/23 16:10	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 16:10	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:46	1
Barium	0.60	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:46	1
Cadmium	0.0015	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:46	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:46	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Lab Sample ID: 240-180647-1

Date Collected: 02/18/23 13:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0086	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:46	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:46	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:46	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.6		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	21.4		0.1	0.1	%			02/19/23 15:02	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Date Collected: 02/18/23 13:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		28	8.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,1,2,2-Tetrachloroethane	ND		28	17	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		28	7.6	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,1,2-Trichloroethane	ND		28	6.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,1-Dichloroethane	ND		28	5.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,1-Dichloroethene	ND		28	9.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,2,4-Trichlorobenzene	ND		28	15	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,2-Dibromo-3-Chloropropane	ND		57	25	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Ethylene Dibromide	ND		28	8.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,2-Dichlorobenzene	ND		28	14	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,2-Dichloroethane	ND		28	5.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,2-Dichloropropane	ND		28	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,3-Dichlorobenzene	ND		28	5.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
1,4-Dichlorobenzene	ND		28	6.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
2-Butanone (MEK)	ND		110	18	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
2-Hexanone	ND		110	30	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
4-Methyl-2-pentanone (MIBK)	ND		110	27	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Acetone	ND		110	28	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Benzene	ND		28	4.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Dichlorobromomethane	ND		28	6.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Bromoform	ND		28	26	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Bromomethane	ND		28	19	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Carbon disulfide	ND		28	12	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Carbon tetrachloride	ND		28	12	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Chlorobenzene	ND		28	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Chloroethane	ND		28	17	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Chloroform	ND		28	6.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Chloromethane	ND		28	7.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
cis-1,2-Dichloroethene	ND		28	4.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
cis-1,3-Dichloropropene	ND		28	14	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Cyclohexane	ND		57	18	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Chlorodibromomethane	ND		28	13	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Dichlorodifluoromethane	ND		28	6.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Ethylbenzene	ND		28	5.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Isopropylbenzene	ND		28	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Methyl acetate	ND		140	19	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Methyl tert-butyl ether	ND		28	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Methylcyclohexane	ND		57	7.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Methylene Chloride	ND		57	43	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Styrene	ND		28	5.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Tetrachloroethene	ND		28	11	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Toluene	ND		28	27	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
trans-1,2-Dichloroethene	ND		28	7.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
trans-1,3-Dichloropropene	ND		28	12	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Trichloroethene	ND		28	16	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Trichlorofluoromethane	ND		28	16	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125
Vinyl chloride	0.16	J	0.23	0.11	mg/Kg	✱	02/21/23 13:30	02/24/23 03:43	1
Xylenes, Total	ND		57	10	mg/Kg	✱	02/21/23 13:30	02/24/23 15:20	125

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Date Collected: 02/18/23 13:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		56 - 125	02/21/23 13:30	02/24/23 03:43	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 15:20	125
Dibromofluoromethane (Surr)	89		41 - 138	02/21/23 13:30	02/24/23 03:43	1
Dibromofluoromethane (Surr)	81		41 - 138	02/21/23 13:30	02/24/23 15:20	125
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/24/23 03:43	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/21/23 13:30	02/24/23 15:20	125
1,2-Dichloroethane-d4 (Surr)	95		58 - 125	02/21/23 13:30	02/24/23 03:43	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/24/23 15:20	125

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4-Dinitrophenol	ND		7.8	3.3	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Methylnaphthalene	1.2		0.35	0.046	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Methylphenol	ND		4.7	0.73	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Nitroaniline	ND		4.7	0.94	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
2-Nitrophenol	ND		1.2	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
3-Nitroaniline	ND		4.7	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4,6-Dinitro-2-methylphenol	ND		7.8	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
4-Nitrophenol	ND		7.8	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Acenaphthene	0.22 J		0.35	0.067	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Acenaphthylene	ND		0.35	0.094	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Acetophenone	ND		2.3	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Anthracene	0.19 J		0.35	0.057	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Atrazine	ND		4.7	0.85	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzaldehyde	ND		2.3	0.54	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzo[a]anthracene	0.35		0.35	0.080	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzo[a]pyrene	0.23 J		0.35	0.22	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzo[b]fluoranthene	0.39		0.35	0.15	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzo[g,h,i]perylene	0.18 J		0.35	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Benzo[k]fluoranthene	ND		0.35	0.16	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg	☼	02/21/23 09:46	02/23/23 12:40	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Date Collected: 02/18/23 13:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		7.8	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Carbazole	ND		1.2	0.45	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Chrysene	0.37		0.35	0.035	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Dibenzofuran	0.49	J	1.2	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Diethyl phthalate	ND		1.6	0.73	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Fluoranthene	0.90		0.35	0.10	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Fluorene	0.22	J	0.35	0.064	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Hexachlorocyclopentadiene	ND		7.8	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Indeno[1,2,3-cd]pyrene	ND		0.35	0.17	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Isophorone	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Naphthalene	0.77		0.35	0.057	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Nitrobenzene	ND		2.3	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Phenanthrene	1.3		0.35	0.052	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Phenol	ND		1.2	0.19	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
Pyrene	0.74		0.35	0.050	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg	✳	02/21/23 09:46	02/23/23 12:40	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	55		46 - 137	02/21/23 09:46	02/23/23 12:40	20
Phenol-d5 (Surr)	48		26 - 120	02/21/23 09:46	02/23/23 12:40	20
Nitrobenzene-d5 (Surr)	38		25 - 120	02/21/23 09:46	02/23/23 12:40	20
2-Fluorophenol (Surr)	45		20 - 120	02/21/23 09:46	02/23/23 12:40	20
2-Fluorobiphenyl (Surr)	44		34 - 120	02/21/23 09:46	02/23/23 12:40	20
2,4,6-Tribromophenol (Surr)	31		10 - 120	02/21/23 09:46	02/23/23 12:40	20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/21/23 09:46	02/23/23 16:33	100
Phenol-d5 (Surr)	53		26 - 120	02/21/23 09:46	02/23/23 16:33	100
Nitrobenzene-d5 (Surr)	0	S1-	25 - 120	02/21/23 09:46	02/23/23 16:33	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	02/21/23 09:46	02/23/23 16:33	100
2-Fluorobiphenyl (Surr)	52		34 - 120	02/21/23 09:46	02/23/23 16:33	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 16:33	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:51	1
Barium	0.54	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:51	1
Cadmium	0.0020	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:51	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:51	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Date Collected: 02/18/23 13:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.012	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:51	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:51	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:51	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.1		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	15.9		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		250	77	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,1,2,2-Tetrachloroethane	ND		250	150	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		250	66	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,1,2-Trichloroethane	ND		250	56	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,1-Dichloroethane	ND		250	47	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,1-Dichloroethene	ND		250	81	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,2,4-Trichlorobenzene	ND		250	130	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,2-Dibromo-3-Chloropropane	ND		490	220	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Ethylene Dibromide	ND		250	78	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,2-Dichlorobenzene	ND		250	120	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,2-Dichloroethane	ND		250	46	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,2-Dichloropropane	ND		250	37	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,3-Dichlorobenzene	ND		250	46	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
1,4-Dichlorobenzene	ND		250	54	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
2-Butanone (MEK)	ND		990	160	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
2-Hexanone	ND		990	260	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
4-Methyl-2-pentanone (MIBK)	ND		990	240	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Acetone	ND		990	240	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Benzene	ND		250	42	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Dichlorobromomethane	ND		250	60	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Bromoform	ND		250	230	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Bromomethane	ND		250	160	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Carbon disulfide	ND		250	110	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Carbon tetrachloride	ND		250	100	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Chlorobenzene	ND		250	35	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Chloroethane	ND		250	150	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Chloroform	ND		250	53	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Chloromethane	ND		250	65	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
cis-1,2-Dichloroethene	ND		250	40	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
cis-1,3-Dichloropropene	ND		250	120	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Cyclohexane	ND		490	160	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Chlorodibromomethane	ND		250	120	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Dichlorodifluoromethane	ND		250	52	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Ethylbenzene	ND		250	46	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Isopropylbenzene	ND		250	38	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Methyl acetate	ND		1200	170	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Methyl tert-butyl ether	ND		250	37	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Methylcyclohexane	ND		490	65	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Methylene Chloride	ND		490	380	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Styrene	ND		250	51	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Tetrachloroethene	ND		250	96	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Toluene	ND		250	240	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
trans-1,2-Dichloroethene	ND		250	61	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
trans-1,3-Dichloropropene	ND		250	100	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Trichloroethene	ND		250	140	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Trichlorofluoromethane	ND		250	140	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000
Vinyl chloride	0.25		0.25	0.12	mg/Kg	✱	02/21/23 13:30	02/24/23 04:07	1
Xylenes, Total	ND		490	90	mg/Kg	✱	02/21/23 13:30	02/23/23 13:24	1000

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/23/23 13:24	1000
Toluene-d8 (Surr)	102		56 - 125	02/21/23 13:30	02/24/23 04:07	1
Dibromofluoromethane (Surr)	78		41 - 138	02/21/23 13:30	02/23/23 13:24	1000
Dibromofluoromethane (Surr)	97		41 - 138	02/21/23 13:30	02/24/23 04:07	1
4-Bromofluorobenzene (Surr)	68		41 - 143	02/21/23 13:30	02/23/23 13:24	1000
4-Bromofluorobenzene (Surr)	99		41 - 143	02/21/23 13:30	02/24/23 04:07	1
1,2-Dichloroethane-d4 (Surr)	79		58 - 125	02/21/23 13:30	02/23/23 13:24	1000
1,2-Dichloroethane-d4 (Surr)	100		58 - 125	02/21/23 13:30	02/24/23 04:07	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		12	4.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
bis (2-chloroisopropyl) ether	ND		24	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4,5-Trichlorophenol	ND		36	17	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4,6-Trichlorophenol	ND		36	15	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4-Dichlorophenol	ND		36	11	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4-Dimethylphenol	ND		36	9.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4-Dinitrophenol	ND		80	34	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,4-Dinitrotoluene	ND		48	15	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2,6-Dinitrotoluene	ND		48	13	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Chloronaphthalene	ND		12	3.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Chlorophenol	ND		12	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Methylnaphthalene	1.6	J	3.6	0.47	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Methylphenol	ND		48	7.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Nitroaniline	ND		48	9.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
2-Nitrophenol	ND		12	3.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
3,3'-Dichlorobenzidine	ND		24	10	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
3-Nitroaniline	ND		48	12	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4,6-Dinitro-2-methylphenol	ND		80	19	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Bromophenyl phenyl ether	ND		12	3.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Chloro-3-methylphenol	ND		36	11	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Chloroaniline	ND		36	7.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Chlorophenyl phenyl ether	ND		12	3.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Nitroaniline	ND		48	14	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
4-Nitrophenol	ND		80	23	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Acenaphthene	ND		3.6	0.69	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Acenaphthylene	ND		3.6	0.97	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Acetophenone	ND		24	2.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Anthracene	ND		3.6	0.58	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Atrazine	ND		48	8.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzaldehyde	ND		24	5.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzo[a]anthracene	ND		3.6	0.82	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzo[a]pyrene	ND		3.6	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzo[b]fluoranthene	ND		3.6	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzo[g,h,i]perylene	ND		3.6	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Benzo[k]fluoranthene	ND		3.6	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Bis(2-chloroethoxy)methane	ND		24	2.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Bis(2-chloroethyl)ether	ND		24	2.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Bis(2-ethylhexyl) phthalate	ND		17	12	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200
Butyl benzyl phthalate	ND		17	5.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:03	200

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		80	18	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Carbazole	ND		12	4.6	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Chrysene	ND		3.6	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Dibenz(a,h)anthracene	ND		3.6	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Dibenzofuran	ND		12	3.1	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Diethyl phthalate	ND		17	7.5	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Dimethyl phthalate	ND		17	3.4	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Di-n-butyl phthalate	ND		17	12	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Di-n-octyl phthalate	ND		17	6.7	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Fluoranthene	ND		3.6	1.1	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Fluorene	ND		3.6	0.66	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Hexachlorobenzene	ND		3.6	0.69	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Hexachlorobutadiene	ND		12	2.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Hexachlorocyclopentadiene	ND		80	15	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Hexachloroethane	ND		12	2.2	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Indeno[1,2,3-cd]pyrene	ND		3.6	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Isophorone	ND		12	2.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
N-Nitrosodi-n-propylamine	ND		12	2.7	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
N-Nitrosodiphenylamine	ND		12	2.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Naphthalene	1.1	J	3.6	0.58	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Nitrobenzene	ND		24	3.1	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Pentachlorophenol	ND		36	14	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Phenanthrene	1.3	J	3.6	0.54	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Phenol	ND		12	1.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
Pyrene	ND		3.6	0.52	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200
3 & 4 Methylphenol	ND		96	7.0	mg/Kg	✳	02/21/23 09:46	02/23/23 13:03	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/21/23 09:46	02/23/23 13:03	200
Phenol-d5 (Surr)	0	S1-	26 - 120	02/21/23 09:46	02/23/23 13:03	200
Nitrobenzene-d5 (Surr)	0	S1-	25 - 120	02/21/23 09:46	02/23/23 13:03	200
2-Fluorophenol (Surr)	0	S1-	20 - 120	02/21/23 09:46	02/23/23 13:03	200
2-Fluorobiphenyl (Surr)	0	S1-	34 - 120	02/21/23 09:46	02/23/23 13:03	200
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 13:03	200

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 10:55	1
Barium	0.46	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 10:55	1
Cadmium	0.0015	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 10:55	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 10:55	1
Lead	0.0097	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 10:55	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 10:55	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 10:55	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:13	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.1		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	15.9		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 72.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		37	11	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,1,2,2-Tetrachloroethane	ND		37	22	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		37	9.8	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,1,2-Trichloroethane	ND		37	8.3	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,1-Dichloroethane	ND		37	7.0	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,1-Dichloroethene	ND		37	12	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,2,4-Trichlorobenzene	ND		37	19	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,2-Dibromo-3-Chloropropane	ND		73	32	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Ethylene Dibromide	ND		37	12	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,2-Dichlorobenzene	ND		37	18	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,2-Dichloroethane	ND		37	6.9	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,2-Dichloropropane	ND		37	5.4	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,3-Dichlorobenzene	ND		37	6.7	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
1,4-Dichlorobenzene	ND		37	8.1	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
2-Butanone (MEK)	ND		150	23	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
2-Hexanone	ND		150	38	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
4-Methyl-2-pentanone (MIBK)	ND		150	35	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Acetone	ND		150	36	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Benzene	ND		37	6.1	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Dichlorobromomethane	ND		37	8.9	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Bromoform	ND		37	33	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Bromomethane	ND		37	24	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Carbon disulfide	ND		37	16	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Carbon tetrachloride	ND		37	15	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Chlorobenzene	ND		37	5.1	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Chloroethane	ND		37	22	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Chloroform	ND		37	7.9	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Chloromethane	ND		37	9.7	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
cis-1,2-Dichloroethene	ND		37	5.9	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
cis-1,3-Dichloropropene	ND		37	18	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Cyclohexane	ND		73	24	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Chlorodibromomethane	ND		37	17	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Dichlorodifluoromethane	ND		37	7.8	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Ethylbenzene	ND		37	6.9	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Isopropylbenzene	ND		37	5.6	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Methyl acetate	ND		180	25	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Methyl tert-butyl ether	ND		37	5.4	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Methylcyclohexane	ND		73	9.7	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Methylene Chloride	ND		73	56	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Styrene	ND		37	7.6	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Tetrachloroethene	ND		37	14	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Toluene	ND		37	35	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
trans-1,2-Dichloroethene	ND		37	9.1	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
trans-1,3-Dichloropropene	ND		37	15	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Trichloroethene	ND		37	21	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Trichlorofluoromethane	ND		37	20	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100
Vinyl chloride	12		0.37	0.18	mg/Kg	✱	02/21/23 13:30	02/24/23 04:31	1
Xylenes, Total	ND		73	13	mg/Kg	✱	02/21/23 13:30	02/23/23 13:46	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 72.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	76		56 - 125	02/21/23 13:30	02/23/23 13:46	100
Toluene-d8 (Surr)	103		56 - 125	02/21/23 13:30	02/24/23 04:31	1
Dibromofluoromethane (Surr)	81		41 - 138	02/21/23 13:30	02/23/23 13:46	100
Dibromofluoromethane (Surr)	89		41 - 138	02/21/23 13:30	02/24/23 04:31	1
4-Bromofluorobenzene (Surr)	69		41 - 143	02/21/23 13:30	02/23/23 13:46	100
4-Bromofluorobenzene (Surr)	99		41 - 143	02/21/23 13:30	02/24/23 04:31	1
1,2-Dichloroethane-d4 (Surr)	82		58 - 125	02/21/23 13:30	02/23/23 13:46	100
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/21/23 13:30	02/24/23 04:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.9	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
bis (2-chloroisopropyl) ether	ND		14	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4,5-Trichlorophenol	ND		21	9.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4,6-Trichlorophenol	ND		21	8.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4-Dichlorophenol	ND		21	6.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4-Dimethylphenol	ND		21	5.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4-Dinitrophenol	ND		45	19	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,4-Dinitrotoluene	ND		27	8.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2,6-Dinitrotoluene	ND		27	7.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Chloronaphthalene	ND		6.9	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Chlorophenol	ND		6.9	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Methylnaphthalene	1.8	J	2.1	0.27	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Methylphenol	ND		27	4.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Nitroaniline	ND		27	5.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
2-Nitrophenol	ND		6.9	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
3,3'-Dichlorobenzidine	ND		14	5.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
3-Nitroaniline	ND		27	6.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4,6-Dinitro-2-methylphenol	ND		45	11	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Bromophenyl phenyl ether	ND		6.9	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Chloro-3-methylphenol	ND		21	6.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Chloroaniline	ND		21	4.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Chlorophenyl phenyl ether	ND		6.9	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Nitroaniline	ND		27	8.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
4-Nitrophenol	ND		45	13	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Acenaphthene	ND		2.1	0.39	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Acenaphthylene	ND		2.1	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Acetophenone	ND		14	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Anthracene	ND		2.1	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Atrazine	ND		27	4.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzaldehyde	ND		14	3.2	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzo[a]anthracene	ND		2.1	0.47	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzo[a]pyrene	ND		2.1	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzo[b]fluoranthene	ND		2.1	0.89	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzo[g,h,i]perylene	ND		2.1	0.97	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Benzo[k]fluoranthene	ND		2.1	0.95	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Bis(2-chloroethoxy)methane	ND		14	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Bis(2-chloroethyl)ether	ND		14	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Bis(2-ethylhexyl) phthalate	ND		9.6	7.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100
Butyl benzyl phthalate	ND		9.6	3.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:26	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 72.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		45	10	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Carbazole	ND		6.9	2.6	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Chrysene	ND		2.1	0.20	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Dibenz(a,h)anthracene	ND		2.1	0.95	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Dibenzofuran	ND		6.9	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Diethyl phthalate	ND		9.6	4.3	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Dimethyl phthalate	ND		9.6	1.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Di-n-butyl phthalate	ND		9.6	6.9	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Di-n-octyl phthalate	ND		9.6	3.8	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Fluoranthene	0.78	J	2.1	0.61	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Fluorene	ND		2.1	0.38	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Hexachlorobenzene	ND		2.1	0.39	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Hexachlorobutadiene	ND		6.9	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Hexachlorocyclopentadiene	ND		45	8.5	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Hexachloroethane	ND		6.9	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Indeno[1,2,3-cd]pyrene	ND		2.1	1.0	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Isophorone	ND		6.9	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
N-Nitrosodi-n-propylamine	ND		6.9	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
N-Nitrosodiphenylamine	ND		6.9	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Naphthalene	1.2	J	2.1	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Nitrobenzene	ND		14	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Pentachlorophenol	ND		21	8.0	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Phenanthrene	1.4	J	2.1	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Phenol	ND		6.9	1.1	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
Pyrene	0.76	J	2.1	0.29	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100
3 & 4 Methylphenol	ND		55	4.0	mg/Kg	✳	02/21/23 09:46	02/23/23 13:26	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/21/23 09:46	02/23/23 13:26	100
Phenol-d5 (Surr)	0	S1-	26 - 120	02/21/23 09:46	02/23/23 13:26	100
Nitrobenzene-d5 (Surr)	0	S1-	25 - 120	02/21/23 09:46	02/23/23 13:26	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	02/21/23 09:46	02/23/23 13:26	100
2-Fluorobiphenyl (Surr)	0	S1-	34 - 120	02/21/23 09:46	02/23/23 13:26	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 13:26	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:00	1
Barium	0.51	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:00	1
Cadmium	0.0013	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:00	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:00	1
Lead	0.011	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:00	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:00	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:00	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:15	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 72.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	72.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	27.2		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		77	24	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,1,2,2-Tetrachloroethane	ND		77	46	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		77	21	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,1,2-Trichloroethane	ND		77	17	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,1-Dichloroethane	ND		77	15	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,1-Dichloroethene	ND		77	25	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,2,4-Trichlorobenzene	ND		77	41	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,2-Dibromo-3-Chloropropane	ND		150	68	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Ethylene Dibromide	ND		77	24	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,2-Dichlorobenzene	ND		77	37	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,2-Dichloroethane	ND		77	14	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,2-Dichloropropane	ND		77	11	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,3-Dichlorobenzene	ND		77	14	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
1,4-Dichlorobenzene	ND		77	17	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
2-Butanone (MEK)	ND		310	48	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
2-Hexanone	ND		310	80	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
4-Methyl-2-pentanone (MIBK)	ND		310	73	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Acetone	ND		310	75	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Benzene	ND		77	13	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Dichlorobromomethane	ND		77	19	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Bromoform	ND		77	70	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Bromomethane	ND		77	51	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Carbon disulfide	ND		77	33	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Carbon tetrachloride	ND		77	31	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Chlorobenzene	ND		77	11	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Chloroethane	ND		77	46	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Chloroform	ND		77	17	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Chloromethane	ND		77	20	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
cis-1,2-Dichloroethene	ND		77	12	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
cis-1,3-Dichloropropene	ND		77	38	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Cyclohexane	ND		150	50	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Chlorodibromomethane	ND		77	36	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Dichlorodifluoromethane	ND		77	16	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Ethylbenzene	ND		77	14	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Isopropylbenzene	ND		77	12	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Methyl acetate	ND		380	51	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Methyl tert-butyl ether	ND		77	11	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Methylcyclohexane	ND		150	20	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Methylene Chloride	ND		150	120	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Styrene	ND		77	16	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Tetrachloroethene	ND		77	30	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Toluene	ND		77	73	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
trans-1,2-Dichloroethene	ND		77	19	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
trans-1,3-Dichloropropene	ND		77	32	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Trichloroethene	ND		77	44	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Trichlorofluoromethane	ND		77	42	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250
Vinyl chloride	7.0		0.31	0.15	mg/Kg	✳	02/21/23 13:30	02/24/23 04:55	1
Xylenes, Total	ND		150	28	mg/Kg	✳	02/21/23 13:30	02/23/23 14:07	250

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	02/21/23 13:30	02/23/23 14:07	250
Toluene-d8 (Surr)	100		56 - 125	02/21/23 13:30	02/24/23 04:55	1
Dibromofluoromethane (Surr)	80		41 - 138	02/21/23 13:30	02/23/23 14:07	250
Dibromofluoromethane (Surr)	85		41 - 138	02/21/23 13:30	02/24/23 04:55	1
4-Bromofluorobenzene (Surr)	72		41 - 143	02/21/23 13:30	02/23/23 14:07	250
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/24/23 04:55	1
1,2-Dichloroethane-d4 (Surr)	82		58 - 125	02/21/23 13:30	02/23/23 14:07	250
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	02/21/23 13:30	02/24/23 04:55	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.9	0.99	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
bis (2-chloroisopropyl) ether	ND		5.8	0.58	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4,5-Trichlorophenol	ND		8.8	4.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4,6-Trichlorophenol	ND		8.8	3.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4-Dichlorophenol	ND		8.8	2.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4-Dimethylphenol	ND		8.8	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4-Dinitrophenol	ND		19	8.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,4-Dinitrotoluene	ND		12	3.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2,6-Dinitrotoluene	ND		12	3.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Chloronaphthalene	ND		2.9	0.82	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Chlorophenol	ND		2.9	0.58	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Methylnaphthalene	1.3		0.88	0.11	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Methylphenol	ND		12	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Nitroaniline	ND		12	2.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
2-Nitrophenol	ND		2.9	0.76	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
3,3'-Dichlorobenzidine	ND		5.8	2.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
3-Nitroaniline	ND		12	2.9	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4,6-Dinitro-2-methylphenol	ND		19	4.7	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Bromophenyl phenyl ether	ND		2.9	0.82	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Chloro-3-methylphenol	ND		8.8	2.6	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Chloroaniline	ND		8.8	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Chlorophenyl phenyl ether	ND		2.9	0.82	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Nitroaniline	ND		12	3.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
4-Nitrophenol	ND		19	5.5	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Acenaphthene	ND		0.88	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Acenaphthylene	ND		0.88	0.23	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Acetophenone	ND		5.8	0.64	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Anthracene	ND		0.88	0.14	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Atrazine	ND		12	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzaldehyde	ND		5.8	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzo[a]anthracene	0.34	J	0.88	0.20	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzo[a]pyrene	ND		0.88	0.55	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzo[b]fluoranthene	0.38	J	0.88	0.38	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzo[g,h,i]perylene	ND		0.88	0.41	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Benzo[k]fluoranthene	ND		0.88	0.41	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Bis(2-chloroethoxy)methane	ND		5.8	0.70	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Bis(2-chloroethyl)ether	ND		5.8	0.70	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Bis(2-ethylhexyl) phthalate	ND		4.1	3.0	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50
Butyl benzyl phthalate	ND		4.1	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 13:50	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		19	4.4	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Carbazole	ND		2.9	1.1	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Chrysene	0.46	J	0.88	0.087	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Dibenz(a,h)anthracene	ND		0.88	0.40	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Dibenzofuran	ND		2.9	0.76	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Diethyl phthalate	ND		4.1	1.8	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Dimethyl phthalate	ND		4.1	0.82	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Di-n-butyl phthalate	ND		4.1	3.0	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Di-n-octyl phthalate	ND		4.1	1.6	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Fluoranthene	0.77	J	0.88	0.26	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Fluorene	ND		0.88	0.16	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Hexachlorobenzene	ND		0.88	0.17	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Hexachlorobutadiene	ND		2.9	0.70	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Hexachlorocyclopentadiene	ND		19	3.6	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Hexachloroethane	ND		2.9	0.53	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Indeno[1,2,3-cd]pyrene	ND		0.88	0.43	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Isophorone	ND		2.9	0.70	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
N-Nitrosodi-n-propylamine	ND		2.9	0.64	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
N-Nitrosodiphenylamine	ND		2.9	0.70	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Naphthalene	0.96		0.88	0.14	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Nitrobenzene	ND		5.8	0.76	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Pentachlorophenol	ND		8.8	3.4	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Phenanthrene	1.1		0.88	0.13	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Phenol	ND		2.9	0.47	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
Pyrene	0.70	J	0.88	0.13	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50
3 & 4 Methylphenol	ND		23	1.7	mg/Kg	☆	02/21/23 09:46	02/23/23 13:50	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	50		46 - 137	02/21/23 09:46	02/23/23 13:50	50
Phenol-d5 (Surr)	49		26 - 120	02/21/23 09:46	02/23/23 13:50	50
Nitrobenzene-d5 (Surr)	36		25 - 120	02/21/23 09:46	02/23/23 13:50	50
2-Fluorophenol (Surr)	35		20 - 120	02/21/23 09:46	02/23/23 13:50	50
2-Fluorobiphenyl (Surr)	45		34 - 120	02/21/23 09:46	02/23/23 13:50	50
2,4,6-Tribromophenol (Surr)	30		10 - 120	02/21/23 09:46	02/23/23 13:50	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:04	1
Barium	0.48	J B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:04	1
Cadmium	0.0018	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:04	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:04	1
Lead	0.0097	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:04	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:04	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:04	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.1		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	14.9		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 20:40	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 20:40	1
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L			02/20/23 20:40	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 20:40	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 20:40	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 20:40	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 20:40	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 20:40	1
Vinyl chloride	0.27		0.025	0.00045	mg/L			02/20/23 20:40	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	98		80 - 120		02/20/23 20:40	1
<i>Dibromofluoromethane (Surr)</i>	102		71 - 121		02/20/23 20:40	1
<i>4-Bromofluorobenzene (Surr)</i>	113		80 - 120		02/20/23 20:40	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	96		76 - 120		02/20/23 20:40	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.016	0.0013	mg/L		02/21/23 08:07	02/23/23 16:16	4
2,4,5-Trichlorophenol	ND		0.016	0.0079	mg/L		02/21/23 08:07	02/23/23 16:16	4
2,4,6-Trichlorophenol	ND		0.016	0.0072	mg/L		02/21/23 08:07	02/23/23 16:16	4
2,4-Dinitrotoluene	ND		0.016	0.0083	mg/L		02/21/23 08:07	02/23/23 16:16	4
Hexachlorobenzene	ND		0.0032	0.00064	mg/L		02/21/23 08:07	02/23/23 16:16	4
Hexachlorobutadiene	ND		0.016	0.0022	mg/L		02/21/23 08:07	02/23/23 16:16	4
Hexachloroethane	ND		0.016	0.0016	mg/L		02/21/23 08:07	02/23/23 16:16	4
2-Methylphenol	ND		0.016	0.00084	mg/L		02/21/23 08:07	02/23/23 16:16	4
3 & 4 Methylphenol	ND		0.016	0.00076	mg/L		02/21/23 08:07	02/23/23 16:16	4
Nitrobenzene	ND		0.016	0.0021	mg/L		02/21/23 08:07	02/23/23 16:16	4
Pentachlorophenol	ND		0.064	0.012	mg/L		02/21/23 08:07	02/23/23 16:16	4
Pyridine	ND		0.016	0.0014	mg/L		02/21/23 08:07	02/23/23 16:16	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	114		46 - 137	02/21/23 08:07	02/23/23 16:16	4
<i>Phenol-d5 (Surr)</i>	62		26 - 120	02/21/23 08:07	02/23/23 16:16	4
<i>Nitrobenzene-d5 (Surr)</i>	73		24 - 120	02/21/23 08:07	02/23/23 16:16	4
<i>2-Fluorophenol (Surr)</i>	70		19 - 120	02/21/23 08:07	02/23/23 16:16	4
<i>2-Fluorobiphenyl (Surr)</i>	97		33 - 120	02/21/23 08:07	02/23/23 16:16	4
<i>2,4,6-Tribromophenol (Surr)</i>	108		10 - 120	02/21/23 08:07	02/23/23 16:16	4

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 12:08	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 12:08	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 12:08	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 12:08	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 12:08	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 12:08	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 12:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		10 - 145	02/21/23 08:09	02/22/23 12:08	1
DCB Decachlorobiphenyl	83		10 - 145	02/21/23 08:09	02/22/23 12:08	1
Tetrachloro-m-xylene	53		10 - 123	02/21/23 08:09	02/22/23 12:08	1
Tetrachloro-m-xylene	54		10 - 123	02/21/23 08:09	02/22/23 12:08	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 10:33	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 10:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	70		26 - 136	02/21/23 20:16	02/22/23 10:33	1
2,4-Dichlorophenylacetic acid (Surr)	71		26 - 136	02/21/23 20:16	02/22/23 10:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.6		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	21.4		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		63	32	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1221	ND		63	38	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1232	ND		63	27	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1242	ND		63	24	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1248	ND		63	22	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1254	ND		63	27	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1260	ND		63	27	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1262	ND		63	28	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Aroclor-1268	ND		63	20	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1
Polychlorinated biphenyls, Total	ND		63	38	ug/Kg	✳	02/20/23 08:20	02/21/23 02:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	61		10 - 149	02/20/23 08:20	02/21/23 02:03	1
DCB Decachlorobiphenyl	54		10 - 174	02/20/23 08:20	02/21/23 02:03	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.73	0.24	ng/g	✳	02/21/23 12:53	02/21/23 17:56	1
Perfluorooctanesulfonic acid	ND		0.73	0.24	ng/g	✳	02/21/23 12:53	02/21/23 17:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	65		26 - 159	02/21/23 12:53	02/21/23 17:56	1
13C8 PFOS	83		41 - 154	02/21/23 12:53	02/21/23 17:56	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 75.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		68	21	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,1,2,2-Tetrachloroethane	ND		68	41	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		68	18	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,1,2-Trichloroethane	ND		68	16	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,1-Dichloroethane	ND		68	13	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,1-Dichloroethene	ND		68	22	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,2,4-Trichlorobenzene	ND		68	36	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,2-Dibromo-3-Chloropropane	ND		140	60	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Ethylene Dibromide	ND		68	22	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,2-Dichlorobenzene	ND		68	33	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,2-Dichloroethane	ND		68	13	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,2-Dichloropropane	ND		68	10	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,3-Dichlorobenzene	ND		68	13	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
1,4-Dichlorobenzene	ND		68	15	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
2-Butanone (MEK)	ND		270	43	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
2-Hexanone	ND		270	72	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
4-Methyl-2-pentanone (MIBK)	ND		270	65	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Acetone	ND		270	66	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Benzene	ND		68	11	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Dichlorobromomethane	ND		68	17	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Bromoform	ND		68	62	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Bromomethane	ND		68	45	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Carbon disulfide	ND		68	29	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Carbon tetrachloride	ND		68	28	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Chlorobenzene	ND		68	9.5	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Chloroethane	ND		68	41	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Chloroform	ND		68	15	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Chloromethane	ND		68	18	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
cis-1,2-Dichloroethene	ND		68	11	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
cis-1,3-Dichloropropene	ND		68	34	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Cyclohexane	ND		140	44	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Chlorodibromomethane	ND		68	32	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Dichlorodifluoromethane	ND		68	14	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Ethylbenzene	ND		68	13	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Isopropylbenzene	ND		68	10	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Methyl acetate	ND		340	46	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Methyl tert-butyl ether	ND		68	10	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Methylcyclohexane	ND		140	18	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Methylene Chloride	ND		140	100	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Styrene	ND		68	14	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Tetrachloroethene	ND		68	26	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Toluene	ND		68	65	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
trans-1,2-Dichloroethene	ND		68	17	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
trans-1,3-Dichloropropene	ND		68	29	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Trichloroethene	ND		68	39	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Trichlorofluoromethane	ND		68	37	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200
Vinyl chloride	19		0.34	0.17	mg/Kg	✱	02/21/23 13:30	02/24/23 05:20	1
Xylenes, Total	ND		140	25	mg/Kg	✱	02/21/23 13:30	02/23/23 14:28	200

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 75.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	83		56 - 125	02/21/23 13:30	02/23/23 14:28	200
Toluene-d8 (Surr)	101		56 - 125	02/21/23 13:30	02/24/23 05:20	1
Dibromofluoromethane (Surr)	84		41 - 138	02/21/23 13:30	02/23/23 14:28	200
Dibromofluoromethane (Surr)	88		41 - 138	02/21/23 13:30	02/24/23 05:20	1
4-Bromofluorobenzene (Surr)	75		41 - 143	02/21/23 13:30	02/23/23 14:28	200
4-Bromofluorobenzene (Surr)	96		41 - 143	02/21/23 13:30	02/24/23 05:20	1
1,2-Dichloroethane-d4 (Surr)	88		58 - 125	02/21/23 13:30	02/23/23 14:28	200
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	02/21/23 13:30	02/24/23 05:20	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.5	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4,5-Trichlorophenol	ND		20	9.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4,6-Trichlorophenol	ND		20	8.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4-Dichlorophenol	ND		20	5.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4-Dimethylphenol	ND		20	5.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4-Dinitrophenol	ND		43	18	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,4-Dinitrotoluene	ND		26	8.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2,6-Dinitrotoluene	ND		26	7.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Chloronaphthalene	ND		6.5	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Chlorophenol	ND		6.5	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Methylnaphthalene	1.3	J	2.0	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Methylphenol	ND		26	4.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Nitroaniline	ND		26	5.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
2-Nitrophenol	ND		6.5	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
3,3'-Dichlorobenzidine	ND		13	5.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
3-Nitroaniline	ND		26	6.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4,6-Dinitro-2-methylphenol	ND		43	10	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Bromophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Chloro-3-methylphenol	ND		20	5.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Chloroaniline	ND		20	3.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Chlorophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Nitroaniline	ND		26	7.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
4-Nitrophenol	ND		43	12	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Acenaphthene	ND		2.0	0.37	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Acenaphthylene	ND		2.0	0.52	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Acetophenone	ND		13	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Anthracene	ND		2.0	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Atrazine	ND		26	4.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzaldehyde	ND		13	3.0	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzo[a]anthracene	ND		2.0	0.44	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzo[a]pyrene	ND		2.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzo[b]fluoranthene	ND		2.0	0.85	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzo[g,h,i]perylene	ND		2.0	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Benzo[k]fluoranthene	ND		2.0	0.90	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Bis(2-chloroethoxy)methane	ND		13	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Bis(2-chloroethyl)ether	ND		13	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Bis(2-ethylhexyl) phthalate	ND		9.1	6.6	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100
Butyl benzyl phthalate	ND		9.1	2.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:13	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 75.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		43	9.8	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Carbazole	ND		6.5	2.5	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Chrysene	ND		2.0	0.19	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Dibenz(a,h)anthracene	ND		2.0	0.90	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Dibenzofuran	ND		6.5	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Diethyl phthalate	ND		9.1	4.0	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Dimethyl phthalate	ND		9.1	1.8	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Di-n-butyl phthalate	ND		9.1	6.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Di-n-octyl phthalate	ND		9.1	3.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Fluoranthene	0.96	J	2.0	0.58	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Fluorene	ND		2.0	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Hexachlorobenzene	ND		2.0	0.37	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Hexachlorobutadiene	ND		6.5	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Hexachlorocyclopentadiene	ND		43	8.1	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Hexachloroethane	ND		6.5	1.2	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Indeno[1,2,3-cd]pyrene	ND		2.0	0.96	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Isophorone	ND		6.5	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
N-Nitrosodi-n-propylamine	ND		6.5	1.4	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
N-Nitrosodiphenylamine	ND		6.5	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Naphthalene	0.96	J	2.0	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Nitrobenzene	ND		13	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Pentachlorophenol	ND		20	7.6	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Phenanthrene	1.3	J	2.0	0.29	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Phenol	ND		6.5	1.0	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
Pyrene	0.87	J	2.0	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100
3 & 4 Methylphenol	ND		52	3.8	mg/Kg	✳	02/21/23 09:46	02/23/23 14:13	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/21/23 09:46	02/23/23 14:13	100
Phenol-d5 (Surr)	0	S1-	26 - 120	02/21/23 09:46	02/23/23 14:13	100
Nitrobenzene-d5 (Surr)	0	S1-	25 - 120	02/21/23 09:46	02/23/23 14:13	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	02/21/23 09:46	02/23/23 14:13	100
2-Fluorobiphenyl (Surr)	0	S1-	34 - 120	02/21/23 09:46	02/23/23 14:13	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/21/23 09:46	02/23/23 14:13	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:09	1
Barium	0.52	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:09	1
Cadmium	0.0017	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:09	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:09	1
Lead	0.0096	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:09	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:09	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:09	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 75.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	75.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	24.2		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		280	86	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,1,2,2-Tetrachloroethane	ND		280	170	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		280	74	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,1,2-Trichloroethane	ND		280	63	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,1-Dichloroethane	ND		280	53	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,1-Dichloroethene	ND		280	90	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,2,4-Trichlorobenzene	ND		280	150	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,2-Dibromo-3-Chloropropane	ND		550	240	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Ethylene Dibromide	ND		280	87	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,2-Dichlorobenzene	ND		280	130	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,2-Dichloroethane	ND		280	52	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,2-Dichloropropane	ND		280	41	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,3-Dichlorobenzene	ND		280	51	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
1,4-Dichlorobenzene	ND		280	61	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
2-Butanone (MEK)	ND		1100	170	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
2-Hexanone	ND		1100	290	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
4-Methyl-2-pentanone (MIBK)	ND		1100	260	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Acetone	ND		1100	270	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Benzene	ND		280	46	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Dichlorobromomethane	ND		280	67	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Bromoform	ND		280	250	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Bromomethane	ND		280	180	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Carbon disulfide	ND		280	120	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Carbon tetrachloride	ND		280	110	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Chlorobenzene	ND		280	39	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Chloroethane	ND		280	170	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Chloroform	ND		280	59	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Chloromethane	ND		280	73	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
cis-1,2-Dichloroethene	ND		280	44	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
cis-1,3-Dichloropropene	ND		280	140	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Cyclohexane	ND		550	180	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Chlorodibromomethane	ND		280	130	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Dichlorodifluoromethane	ND		280	58	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Ethylbenzene	ND		280	52	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Isopropylbenzene	ND		280	42	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Methyl acetate	ND		1400	190	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Methyl tert-butyl ether	ND		280	41	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Methylcyclohexane	ND		550	73	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Methylene Chloride	ND		550	420	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Styrene	ND		280	57	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Tetrachloroethene	ND		280	110	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Toluene	ND		280	260	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
trans-1,2-Dichloroethene	ND		280	68	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
trans-1,3-Dichloropropene	ND		280	120	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Trichloroethene	ND		280	160	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Trichlorofluoromethane	ND		280	150	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000
Vinyl chloride	17		0.69	0.34	mg/Kg	✱	02/21/23 13:30	02/24/23 17:01	2.5
Xylenes, Total	ND		550	100	mg/Kg	✱	02/21/23 13:30	02/23/23 14:49	1000

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	02/21/23 13:30	02/23/23 14:49	1000
Toluene-d8 (Surr)	101		56 - 125	02/21/23 13:30	02/24/23 17:01	2.5
Dibromofluoromethane (Surr)	77		41 - 138	02/21/23 13:30	02/23/23 14:49	1000
Dibromofluoromethane (Surr)	90		41 - 138	02/21/23 13:30	02/24/23 17:01	2.5
4-Bromofluorobenzene (Surr)	70		41 - 143	02/21/23 13:30	02/23/23 14:49	1000
4-Bromofluorobenzene (Surr)	98		41 - 143	02/21/23 13:30	02/24/23 17:01	2.5
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	02/21/23 13:30	02/23/23 14:49	1000
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	02/21/23 13:30	02/24/23 17:01	2.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4-Dinitrophenol	ND		9.9	4.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Methylnaphthalene	1.7		0.45	0.059	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Methylphenol	ND		6.0	0.93	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4,6-Dinitro-2-methylphenol	ND		9.9	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Chloroaniline	ND		4.5	0.90	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
4-Nitrophenol	ND		9.9	2.8	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Acenaphthene	0.20	J	0.45	0.085	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Acenaphthylene	ND		0.45	0.12	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Acetophenone	ND		3.0	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Anthracene	0.19	J	0.45	0.072	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzo[a]anthracene	0.38	J	0.45	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzo[a]pyrene	ND		0.45	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzo[b]fluoranthene	0.42	J	0.45	0.19	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzo[g,h,i]perylene	ND		0.45	0.21	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Benzo[k]fluoranthene	ND		0.45	0.21	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/21/23 09:46	02/23/23 14:36	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.9	2.2	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Carbazole	ND		1.5	0.57	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Chrysene	0.46		0.45	0.044	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Dibenzofuran	0.60	J	1.5	0.39	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Diethyl phthalate	ND		2.1	0.93	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Fluoranthene	0.91		0.45	0.13	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Fluorene	0.20	J	0.45	0.082	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Hexachlorocyclopentadiene	ND		9.9	1.9	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Hexachloroethane	ND		1.5	0.27	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Indeno[1,2,3-cd]pyrene	ND		0.45	0.22	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Isophorone	ND		1.5	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Naphthalene	1.1		0.45	0.072	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Nitrobenzene	ND		3.0	0.39	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Pentachlorophenol	ND		4.5	1.7	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Phenanthrene	1.4		0.45	0.067	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Phenol	ND		1.5	0.24	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
Pyrene	0.85		0.45	0.064	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	✳	02/21/23 09:46	02/23/23 14:36	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	45	S1-	46 - 137	02/21/23 09:46	02/23/23 14:36	25
Phenol-d5 (Surr)	51		26 - 120	02/21/23 09:46	02/23/23 14:36	25
Nitrobenzene-d5 (Surr)	37		25 - 120	02/21/23 09:46	02/23/23 14:36	25
2-Fluorophenol (Surr)	36		20 - 120	02/21/23 09:46	02/23/23 14:36	25
2-Fluorobiphenyl (Surr)	40		34 - 120	02/21/23 09:46	02/23/23 14:36	25
2,4,6-Tribromophenol (Surr)	31		10 - 120	02/21/23 09:46	02/23/23 14:36	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:13	1
Barium	0.56	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:13	1
Cadmium	0.0011	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:13	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:13	1
Lead	0.010	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:13	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:13	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:13	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:26	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.7		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	16.3		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		13	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,1,2,2-Tetrachloroethane	ND		13	8.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		13	3.6	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,1,2-Trichloroethane	ND		13	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,1-Dichloroethane	ND		13	2.6	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,1-Dichloroethene	ND		13	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,2,4-Trichlorobenzene	ND		13	7.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,2-Dibromo-3-Chloropropane	ND		27	12	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Ethylene Dibromide	ND		13	4.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,2-Dichlorobenzene	ND		13	6.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,2-Dichloroethane	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,2-Dichloropropane	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,3-Dichlorobenzene	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
1,4-Dichlorobenzene	ND		13	3.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
2-Butanone (MEK)	ND		54	8.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
2-Hexanone	ND		54	14	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
4-Methyl-2-pentanone (MIBK)	ND		54	13	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Acetone	ND		54	13	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Benzene	ND		13	2.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Dichlorobromomethane	ND		13	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Bromoform	ND		13	12	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Bromomethane	ND		13	8.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Carbon disulfide	ND		13	5.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Carbon tetrachloride	ND		13	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Chlorobenzene	ND		13	1.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Chloroethane	ND		13	8.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Chloroform	ND		13	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Chloromethane	ND		13	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
cis-1,2-Dichloroethene	ND		13	2.1	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
cis-1,3-Dichloropropene	ND		13	6.7	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Cyclohexane	ND		27	8.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Chlorodibromomethane	ND		13	6.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Dichlorodifluoromethane	ND		13	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Ethylbenzene	ND		13	2.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Isopropylbenzene	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Methyl acetate	ND		67	9.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Methyl tert-butyl ether	ND		13	2.0	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Methylcyclohexane	ND		27	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Methylene Chloride	ND		27	21	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Styrene	ND		13	2.8	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Tetrachloroethene	ND		13	5.2	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Toluene	ND		13	13	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
trans-1,2-Dichloroethene	ND		13	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
trans-1,3-Dichloropropene	ND		13	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Trichloroethene	ND		13	7.7	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Trichlorofluoromethane	ND		13	7.4	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50
Vinyl chloride	4.0		0.27	0.13	mg/Kg	✱	02/21/23 13:30	02/24/23 06:08	1
Xylenes, Total	ND		27	4.9	mg/Kg	✱	02/21/23 13:30	02/24/23 15:42	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		56 - 125	02/21/23 13:30	02/24/23 06:08	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 15:42	50
Dibromofluoromethane (Surr)	88		41 - 138	02/21/23 13:30	02/24/23 06:08	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/24/23 15:42	50
4-Bromofluorobenzene (Surr)	98		41 - 143	02/21/23 13:30	02/24/23 06:08	1
4-Bromofluorobenzene (Surr)	69		41 - 143	02/21/23 13:30	02/24/23 15:42	50
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	02/21/23 13:30	02/24/23 06:08	1
1,2-Dichloroethane-d4 (Surr)	79		58 - 125	02/21/23 13:30	02/24/23 15:42	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4-Dinitrophenol	ND		9.9	4.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Methylnaphthalene	2.0		0.45	0.059	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Methylphenol	ND		6.0	0.93	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4,6-Dinitro-2-methylphenol	ND		9.9	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Chloroaniline	ND		4.5	0.90	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
4-Nitrophenol	ND		9.9	2.8	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Acenaphthene	0.16	J	0.45	0.086	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Acenaphthylene	ND		0.45	0.12	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Acetophenone	ND		3.0	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Anthracene	0.18	J	0.45	0.072	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzo[a]anthracene	0.46		0.45	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzo[a]pyrene	0.31	J	0.45	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzo[b]fluoranthene	0.50		0.45	0.19	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzo[g,h,i]perylene	0.23	J	0.45	0.21	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Benzo[k]fluoranthene	ND		0.45	0.21	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/21/23 09:46	02/23/23 15:00	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.9	2.2	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Carbazole	ND		1.5	0.57	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Chrysene	0.62		0.45	0.045	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Dibenzofuran	0.63	J	1.5	0.39	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Diethyl phthalate	ND		2.1	0.93	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Fluoranthene	0.86		0.45	0.13	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Fluorene	0.17	J	0.45	0.082	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Hexachlorocyclopentadiene	ND		9.9	1.9	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Hexachloroethane	ND		1.5	0.27	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Indeno[1,2,3-cd]pyrene	ND		0.45	0.22	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Isophorone	ND		1.5	0.36	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Naphthalene	1.3		0.45	0.072	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Nitrobenzene	ND		3.0	0.39	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Pentachlorophenol	ND		4.5	1.7	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Phenanthrene	1.4		0.45	0.067	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Phenol	ND		1.5	0.24	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
Pyrene	0.91		0.45	0.064	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	☆	02/21/23 09:46	02/23/23 15:00	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	64		46 - 137	02/21/23 09:46	02/23/23 15:00	25
Phenol-d5 (Surr)	56		26 - 120	02/21/23 09:46	02/23/23 15:00	25
Nitrobenzene-d5 (Surr)	46		25 - 120	02/21/23 09:46	02/23/23 15:00	25
2-Fluorophenol (Surr)	50		20 - 120	02/21/23 09:46	02/23/23 15:00	25
2-Fluorobiphenyl (Surr)	56		34 - 120	02/21/23 09:46	02/23/23 15:00	25
2,4,6-Tribromophenol (Surr)	46		10 - 120	02/21/23 09:46	02/23/23 15:00	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0048	J	0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:18	1
Barium	0.59	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:18	1
Cadmium	0.0012	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:18	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:18	1
Lead	0.0092	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:18	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:18	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:18	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:28	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.3		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	17.7		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 73.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		35	11	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,1,2,2-Tetrachloroethane	ND		35	21	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		35	9.4	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,1,2-Trichloroethane	ND		35	8.0	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,1-Dichloroethane	ND		35	6.8	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,1-Dichloroethene	ND		35	12	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,2,4-Trichlorobenzene	ND		35	19	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,2-Dibromo-3-Chloropropane	ND		70	31	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Ethylene Dibromide	ND		35	11	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,2-Dichlorobenzene	ND		35	17	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,2-Dichloroethane	ND		35	6.6	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,2-Dichloropropane	ND		35	5.2	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,3-Dichlorobenzene	ND		35	6.5	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
1,4-Dichlorobenzene	ND		35	7.8	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
2-Butanone (MEK)	ND		140	22	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
2-Hexanone	ND		140	37	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
4-Methyl-2-pentanone (MIBK)	ND		140	34	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Acetone	ND		140	34	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Benzene	ND		35	5.9	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Dichlorobromomethane	ND		35	8.6	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Bromoform	ND		35	32	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Bromomethane	ND		35	23	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Carbon disulfide	ND		35	15	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Carbon tetrachloride	ND		35	14	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Chlorobenzene	ND		35	4.9	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Chloroethane	ND		35	21	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Chloroform	ND		35	7.6	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Chloromethane	ND		35	9.3	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
cis-1,2-Dichloroethene	ND		35	5.6	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
cis-1,3-Dichloropropene	ND		35	17	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Cyclohexane	ND		70	23	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Chlorodibromomethane	ND		35	16	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Dichlorodifluoromethane	ND		35	7.5	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Ethylbenzene	ND		35	6.6	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Isopropylbenzene	ND		35	5.4	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Methyl acetate	ND		180	24	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Methyl tert-butyl ether	ND		35	5.2	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Methylcyclohexane	ND		70	9.3	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Methylene Chloride	ND		70	54	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Styrene	ND		35	7.3	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Tetrachloroethene	ND		35	14	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Toluene	ND		35	34	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
trans-1,2-Dichloroethene	ND		35	8.7	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
trans-1,3-Dichloropropene	ND		35	15	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Trichloroethene	ND		35	20	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Trichlorofluoromethane	ND		35	19	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100
Vinyl chloride	4.0		0.35	0.17	mg/Kg	✱	02/21/23 13:30	02/24/23 06:32	1
Xylenes, Total	ND		70	13	mg/Kg	✱	02/21/23 13:30	02/23/23 15:32	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 73.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/21/23 13:30	02/23/23 15:32	100
Toluene-d8 (Surr)	101		56 - 125	02/21/23 13:30	02/24/23 06:32	1
Dibromofluoromethane (Surr)	78		41 - 138	02/21/23 13:30	02/23/23 15:32	100
Dibromofluoromethane (Surr)	86		41 - 138	02/21/23 13:30	02/24/23 06:32	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/21/23 13:30	02/23/23 15:32	100
4-Bromofluorobenzene (Surr)	95		41 - 143	02/21/23 13:30	02/24/23 06:32	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/23/23 15:32	100
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	02/21/23 13:30	02/24/23 06:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.7	0.58	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
bis (2-chloroisopropyl) ether	ND		3.4	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4,5-Trichlorophenol	ND		5.1	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4,6-Trichlorophenol	ND		5.1	2.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4-Dichlorophenol	ND		5.1	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4-Dimethylphenol	ND		5.1	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4-Dinitrophenol	ND		11	4.9	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,4-Dinitrotoluene	ND		6.8	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2,6-Dinitrotoluene	ND		6.8	1.9	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Chloronaphthalene	ND		1.7	0.48	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Chlorophenol	ND		1.7	0.34	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Methylnaphthalene	2.0		0.51	0.067	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Methylphenol	ND		6.8	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Nitroaniline	ND		6.8	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
2-Nitrophenol	ND		1.7	0.44	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
3,3'-Dichlorobenzidine	ND		3.4	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
3-Nitroaniline	ND		6.8	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4,6-Dinitro-2-methylphenol	ND		11	2.7	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Bromophenyl phenyl ether	ND		1.7	0.48	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Chloro-3-methylphenol	ND		5.1	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Chloroaniline	ND		5.1	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Chlorophenyl phenyl ether	ND		1.7	0.48	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Nitroaniline	ND		6.8	2.0	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
4-Nitrophenol	ND		11	3.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Acenaphthene	0.58		0.51	0.098	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Acenaphthylene	ND		0.51	0.14	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Acetophenone	ND		3.4	0.38	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Anthracene	0.75		0.51	0.082	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Atrazine	ND		6.8	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzaldehyde	ND		3.4	0.79	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzo[a]anthracene	0.82		0.51	0.12	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzo[a]pyrene	0.34 J		0.51	0.32	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzo[b]fluoranthene	0.61		0.51	0.22	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzo[g,h,i]perylene	ND		0.51	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Benzo[k]fluoranthene	0.24 J		0.51	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Bis(2-chloroethoxy)methane	ND		3.4	0.41	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Bis(2-chloroethyl)ether	ND		3.4	0.41	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Bis(2-ethylhexyl) phthalate	ND		2.4	1.7	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25
Butyl benzyl phthalate	ND		2.4	0.75	mg/Kg	☼	02/21/23 09:46	02/23/23 15:23	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 73.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		11	2.6	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Carbazole	ND		1.7	0.65	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Chrysene	1.0		0.51	0.051	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Dibenz(a,h)anthracene	ND		0.51	0.24	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Dibenzofuran	0.96	J	1.7	0.44	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Diethyl phthalate	ND		2.4	1.1	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Dimethyl phthalate	ND		2.4	0.48	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Di-n-butyl phthalate	ND		2.4	1.7	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Di-n-octyl phthalate	ND		2.4	0.96	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Fluoranthene	2.5		0.51	0.15	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Fluorene	0.89		0.51	0.094	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Hexachlorobenzene	ND		0.51	0.097	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Hexachlorobutadiene	ND		1.7	0.41	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Hexachlorocyclopentadiene	ND		11	2.1	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Hexachloroethane	ND		1.7	0.31	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Indeno[1,2,3-cd]pyrene	ND		0.51	0.25	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Isophorone	ND		1.7	0.41	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
N-Nitrosodi-n-propylamine	ND		1.7	0.38	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
N-Nitrosodiphenylamine	ND		1.7	0.41	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Naphthalene	1.2		0.51	0.082	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Nitrobenzene	ND		3.4	0.44	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Pentachlorophenol	ND		5.1	2.0	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Phenanthrene	4.4		0.51	0.076	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Phenol	ND		1.7	0.27	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
Pyrene	2.3		0.51	0.073	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25
3 & 4 Methylphenol	ND		14	0.99	mg/Kg	☆	02/21/23 09:46	02/23/23 15:23	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	52		46 - 137	02/21/23 09:46	02/23/23 15:23	25
Phenol-d5 (Surr)	51		26 - 120	02/21/23 09:46	02/23/23 15:23	25
Nitrobenzene-d5 (Surr)	39		25 - 120	02/21/23 09:46	02/23/23 15:23	25
2-Fluorophenol (Surr)	42		20 - 120	02/21/23 09:46	02/23/23 15:23	25
2-Fluorobiphenyl (Surr)	46		34 - 120	02/21/23 09:46	02/23/23 15:23	25
2,4,6-Tribromophenol (Surr)	37		10 - 120	02/21/23 09:46	02/23/23 15:23	25

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:22	1
Barium	0.66	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:22	1
Cadmium	0.00063	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:22	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:22	1
Lead	0.0099	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:22	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:22	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:22	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 73.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	73.7		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	26.3		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		21	6.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,1,2,2-Tetrachloroethane	ND		21	12	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		21	5.6	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,1,2-Trichloroethane	ND		21	4.7	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,1-Dichloroethane	ND		21	4.0	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,1-Dichloroethene	ND		21	6.8	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,2,4-Trichlorobenzene	ND		21	11	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,2-Dibromo-3-Chloropropane	ND		42	18	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Ethylene Dibromide	ND		21	6.6	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,2-Dichlorobenzene	ND		21	10	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,2-Dichloroethane	ND		21	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,2-Dichloropropane	ND		21	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,3-Dichlorobenzene	ND		21	3.8	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
1,4-Dichlorobenzene	ND		21	4.6	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
2-Butanone (MEK)	ND		83	13	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
2-Hexanone	ND		83	22	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
4-Methyl-2-pentanone (MIBK)	ND		83	20	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Acetone	ND		83	20	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Benzene	ND		21	3.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Dichlorobromomethane	ND		21	5.1	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Bromoform	ND		21	19	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Bromomethane	ND		21	14	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Carbon disulfide	ND		21	9.0	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Carbon tetrachloride	ND		21	8.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Chlorobenzene	ND		21	2.9	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Chloroethane	ND		21	12	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Chloroform	ND		21	4.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Chloromethane	ND		21	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
cis-1,2-Dichloroethene	ND		21	3.3	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
cis-1,3-Dichloropropene	ND		21	10	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Cyclohexane	ND		42	14	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Chlorodibromomethane	ND		21	9.7	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Dichlorodifluoromethane	ND		21	4.4	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Ethylbenzene	ND		21	3.9	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Isopropylbenzene	ND		21	3.2	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Methyl acetate	ND		100	14	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Methyl tert-butyl ether	ND		21	3.1	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Methylcyclohexane	ND		42	5.5	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Methylene Chloride	ND		42	32	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Styrene	ND		21	4.3	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Tetrachloroethene	ND		21	8.1	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Toluene	ND		21	20	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
trans-1,2-Dichloroethene	ND		21	5.2	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
trans-1,3-Dichloropropene	ND		21	8.7	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Trichloroethene	ND		21	12	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Trichlorofluoromethane	ND		21	11	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667
Vinyl chloride	7.8		0.31	0.15	mg/Kg	✱	02/21/23 13:30	02/24/23 06:57	1
Xylenes, Total	ND		42	7.6	mg/Kg	✱	02/21/23 13:30	02/24/23 16:03	66.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		56 - 125	02/21/23 13:30	02/24/23 06:57	1
Toluene-d8 (Surr)	77		56 - 125	02/21/23 13:30	02/24/23 16:03	66.667
Dibromofluoromethane (Surr)	86		41 - 138	02/21/23 13:30	02/24/23 06:57	1
Dibromofluoromethane (Surr)	78		41 - 138	02/21/23 13:30	02/24/23 16:03	66.667
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/24/23 06:57	1
4-Bromofluorobenzene (Surr)	69		41 - 143	02/21/23 13:30	02/24/23 16:03	66.667
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	02/21/23 13:30	02/24/23 06:57	1
1,2-Dichloroethane-d4 (Surr)	74		58 - 125	02/21/23 13:30	02/24/23 16:03	66.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.44	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
bis (2-chloroisopropyl) ether	ND		2.6	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4,5-Trichlorophenol	ND		3.8	1.8	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4,6-Trichlorophenol	ND		3.8	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4-Dichlorophenol	ND		3.8	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4-Dimethylphenol	ND		3.8	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4-Dinitrophenol	ND		8.5	3.6	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,4-Dinitrotoluene	ND		5.1	1.6	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2,6-Dinitrotoluene	ND		5.1	1.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Chlorophenol	ND		1.3	0.26	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Methylnaphthalene	0.94		0.38	0.050	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Methylphenol	ND		5.1	0.80	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Nitroaniline	ND		5.1	1.0	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
2-Nitrophenol	ND		1.3	0.33	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
3,3'-Dichlorobenzidine	ND		2.6	1.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
3-Nitroaniline	ND		5.1	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4,6-Dinitro-2-methylphenol	ND		8.5	2.1	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Chloro-3-methylphenol	ND		3.8	1.2	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Chloroaniline	ND		3.8	0.77	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Nitroaniline	ND		5.1	1.5	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
4-Nitrophenol	ND		8.5	2.4	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Acenaphthene	0.091	J	0.38	0.073	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Acenaphthylene	ND		0.38	0.10	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Acetophenone	ND		2.6	0.28	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Anthracene	0.12	J	0.38	0.062	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Atrazine	ND		5.1	0.92	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzaldehyde	ND		2.6	0.59	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzo[a]anthracene	0.23	J	0.38	0.087	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzo[a]pyrene	ND		0.38	0.24	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzo[b]fluoranthene	0.23	J	0.38	0.17	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzo[g,h,i]perylene	ND		0.38	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Benzo[k]fluoranthene	ND		0.38	0.18	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Bis(2-chloroethoxy)methane	ND		2.6	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Bis(2-chloroethyl)ether	ND		2.6	0.31	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20
Butyl benzyl phthalate	ND		1.8	0.56	mg/Kg	☼	02/21/23 09:46	02/23/23 15:46	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.5	1.9	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Carbazole	ND		1.3	0.49	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Chrysene	0.26	J	0.38	0.038	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Dibenz(a,h)anthracene	ND		0.38	0.18	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Dibenzofuran	0.37	J	1.3	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Diethyl phthalate	ND		1.8	0.80	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Dimethyl phthalate	ND		1.8	0.36	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Di-n-octyl phthalate	ND		1.8	0.72	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Fluoranthene	0.47		0.38	0.11	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Fluorene	0.13	J	0.38	0.070	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Hexachlorobenzene	ND		0.38	0.073	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Hexachlorobutadiene	ND		1.3	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Hexachlorocyclopentadiene	ND		8.5	1.6	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Indeno[1,2,3-cd]pyrene	ND		0.38	0.19	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Isophorone	ND		1.3	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
N-Nitrosodiphenylamine	ND		1.3	0.31	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Naphthalene	0.55		0.38	0.062	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Nitrobenzene	ND		2.6	0.33	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Pentachlorophenol	ND		3.8	1.5	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Phenanthrene	0.94		0.38	0.057	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Phenol	ND		1.3	0.21	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
Pyrene	0.47		0.38	0.055	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20
3 & 4 Methylphenol	ND		10	0.74	mg/Kg	✳	02/21/23 09:46	02/23/23 15:46	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	63		46 - 137	02/21/23 09:46	02/23/23 15:46	20
Phenol-d5 (Surr)	55		26 - 120	02/21/23 09:46	02/23/23 15:46	20
Nitrobenzene-d5 (Surr)	41		25 - 120	02/21/23 09:46	02/23/23 15:46	20
2-Fluorophenol (Surr)	47		20 - 120	02/21/23 09:46	02/23/23 15:46	20
2-Fluorobiphenyl (Surr)	50		34 - 120	02/21/23 09:46	02/23/23 15:46	20
2,4,6-Tribromophenol (Surr)	40		10 - 120	02/21/23 09:46	02/23/23 15:46	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0044	J	0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 11:35	1
Barium	0.55	B	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 11:35	1
Cadmium	0.0011	J B	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 11:35	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 11:35	1
Lead	0.0096	J	0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 11:35	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 11:35	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 11:35	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 11:32	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	21.2		0.1	0.1	%			02/19/23 15:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 21:03	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 21:03	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/20/23 21:03	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 21:03	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 21:03	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 21:03	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 21:03	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 21:03	1
Vinyl chloride	0.44		0.025	0.00045	mg/L			02/20/23 21:03	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		80 - 120		02/20/23 21:03	1
<i>Dibromofluoromethane (Surr)</i>	102		71 - 121		02/20/23 21:03	1
<i>4-Bromofluorobenzene (Surr)</i>	109		80 - 120		02/20/23 21:03	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		76 - 120		02/20/23 21:03	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/21/23 08:07	02/23/23 15:28	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/21/23 08:07	02/23/23 15:28	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/21/23 08:07	02/23/23 15:28	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/21/23 08:07	02/23/23 15:28	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/21/23 08:07	02/23/23 15:28	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/21/23 08:07	02/23/23 15:28	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/21/23 08:07	02/23/23 15:28	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/21/23 08:07	02/23/23 15:28	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/21/23 08:07	02/23/23 15:28	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/21/23 08:07	02/23/23 15:28	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/21/23 08:07	02/23/23 15:28	1
Pyridine	ND		0.0040	0.00036	mg/L		02/21/23 08:07	02/23/23 15:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	117		46 - 137	02/21/23 08:07	02/23/23 15:28	1
<i>Phenol-d5 (Surr)</i>	64		26 - 120	02/21/23 08:07	02/23/23 15:28	1
<i>Nitrobenzene-d5 (Surr)</i>	72		24 - 120	02/21/23 08:07	02/23/23 15:28	1
<i>2-Fluorophenol (Surr)</i>	71		19 - 120	02/21/23 08:07	02/23/23 15:28	1
<i>2-Fluorobiphenyl (Surr)</i>	96		33 - 120	02/21/23 08:07	02/23/23 15:28	1
<i>2,4,6-Tribromophenol (Surr)</i>	107		10 - 120	02/21/23 08:07	02/23/23 15:28	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 12:20	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 12:20	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 12:20	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 12:20	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 12:20	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 12:20	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 12:20	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		10 - 145	02/21/23 08:09	02/22/23 12:20	1
DCB Decachlorobiphenyl	85		10 - 145	02/21/23 08:09	02/22/23 12:20	1
Tetrachloro-m-xylene	53		10 - 123	02/21/23 08:09	02/22/23 12:20	1
Tetrachloro-m-xylene	55		10 - 123	02/21/23 08:09	02/22/23 12:20	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 11:01	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 11:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	62		26 - 136	02/21/23 20:16	02/22/23 11:01	1
2,4-Dichlorophenylacetic acid (Surr)	62		26 - 136	02/21/23 20:16	02/22/23 11:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	74.8		0.1	0.1	%			02/19/23 15:02	1
Percent Moisture (EPA Moisture)	25.2		0.1	0.1	%			02/19/23 15:02	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 74.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		70	35	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1221	ND		70	42	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1232	ND		70	29	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1242	ND		70	27	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1248	ND		70	24	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1254	ND		70	29	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1260	ND		70	29	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1262	ND		70	31	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Aroclor-1268	ND		70	22	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1
Polychlorinated biphenyls, Total	ND		70	42	ug/Kg	✳	02/20/23 08:20	02/21/23 02:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	65		10 - 149	02/20/23 08:20	02/21/23 02:20	1
DCB Decachlorobiphenyl	56		10 - 174	02/20/23 08:20	02/21/23 02:20	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.76	0.25	ng/g	✳	02/21/23 12:53	02/21/23 18:07	1
Perfluorooctanesulfonic acid	ND		0.76	0.25	ng/g	✳	02/21/23 12:53	02/21/23 18:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	69		26 - 159	02/21/23 12:53	02/21/23 18:07	1
13C8 PFOS	74		41 - 154	02/21/23 12:53	02/21/23 18:07	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180647-1	WC-WS1-B1 (5-6)	77	79	70	83
240-180647-1	WC-WS1-B1 (5-6)	96	110	97	118
240-180647-2	WC-WS1-B2 (3-4)	103	89	97	95
240-180647-2	WC-WS1-B2 (3-4)	77	81	70	78
240-180647-3	WC-WS1-B3 (3-4)	77	78	68	79
240-180647-3	WC-WS1-B3 (3-4)	102	97	99	100
240-180647-4	WC-WS1-B4 (4-5)	76	81	69	82
240-180647-4	WC-WS1-B4 (4-5)	103	89	99	92
240-180647-5	WC-WS1-B5 (2-3)	79	80	72	82
240-180647-5	WC-WS1-B5 (2-3)	100	85	97	90
240-180647-7	WC-WS1-B6 (4-5)	83	84	75	88
240-180647-7	WC-WS1-B6 (4-5)	101	88	96	90
240-180647-8	WC-WS1-B7 (5-6)	79	77	70	80
240-180647-8	WC-WS1-B7 (5-6)	101	90	98	94
240-180647-8 MS	WC-WS1-B7 (5-6)	102	92	99	97
240-180647-8 MSD	WC-WS1-B7 (5-6)	102	91	97	94
240-180647-9	WC-WS1-B8 (4-5)	101	88	98	92
240-180647-9	WC-WS1-B8 (4-5)	77	79	69	79
240-180647-10	WC-WS1-B9 (5-6)	78	78	70	78
240-180647-10	WC-WS1-B9 (5-6)	101	86	95	90
240-180647-11	WC-WS1-B10 (3-4)	102	86	97	90
240-180647-11	WC-WS1-B10 (3-4)	77	78	69	74
240-180647-11 MS	WC-WS1-B10 (3-4)	102	87	96	90
240-180647-11 MS	WC-WS1-B10 (3-4)	79	82	74	76
240-180647-11 MSD	WC-WS1-B10 (3-4)	101	89	97	92
240-180647-11 MSD	WC-WS1-B10 (3-4)	79	82	76	74
LCS 240-562918/2-A	Lab Control Sample	81	80	75	75
LCS 240-562918/2-A	Lab Control Sample	101	88	96	98
LCS 240-562918/2-A	Lab Control Sample	102	86	97	94
MB 240-562918/1-A	Method Blank	85	79	75	78
MB 240-562918/1-A	Method Blank	99	86	97	97
MB 240-562918/1-A	Method Blank	102	87	94	95

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-562664/20	Lab Control Sample	96	107	111	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine
 DCA = 1,2-Dichloroethane-d4 (Surr)

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180647-6	WC-WS1-COMP (B1-B5)	98	102	113	96
240-180647-12	WC-WS1-COMP (B6-B10)	96	102	109	93
LB 240-562615/1-A MB	Method Blank	95	105	108	102

Surrogate Legend

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180647-1 - RA	WC-WS1-B1 (5-6)	71	77	55	62	63	0 S1-
240-180647-1	WC-WS1-B1 (5-6)	66	66	42	53	58	47
240-180647-2 - RA	WC-WS1-B2 (3-4)	0 S1-	53	0 S1-	0 S1-	52	0 S1-
240-180647-2	WC-WS1-B2 (3-4)	55	48	38	45	44	31
240-180647-3	WC-WS1-B3 (3-4)	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180647-4	WC-WS1-B4 (4-5)	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180647-5	WC-WS1-B5 (2-3)	50	49	36	35	45	30
240-180647-7	WC-WS1-B6 (4-5)	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180647-8	WC-WS1-B7 (5-6)	45 S1-	51	37	36	40	31
240-180647-9	WC-WS1-B8 (4-5)	64	56	46	50	56	46
240-180647-10	WC-WS1-B9 (5-6)	52	51	39	42	46	37
240-180647-11	WC-WS1-B10 (3-4)	63	55	41	47	50	40
LCS 240-562873/2-A	Lab Control Sample	107	90	85	81	92	85
LCS 240-562873/3-A	Lab Control Sample	111	81	69	67	79	51
LCS 240-562873/4-A	Lab Control Sample	111	82	69	71	79	60
MB 240-562873/1-A	Method Blank	118	93	82	75	91	53

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-562821/10-A	Lab Control Sample	105	60	67	67	91	99
MB 240-562821/9-A	Method Blank	119	59	74	71	97	97

Surrogate Legend

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180647-6	WC-WS1-COMP (B1-B5)	114	62	73	70	97	108
240-180647-12	WC-WS1-COMP (B6-B10)	117	64	72	71	96	107

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-562822/7-A	Lab Control Sample	90	90	71	69
MB 240-562822/6-A	Method Blank	92	92	69	67

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180647-6	WC-WS1-COMP (B1-B5)	83	83	54	53
240-180647-12	WC-WS1-COMP (B6-B10)	85	83	55	53

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-180647-6	WC-WS1-COMP (B1-B5)	61	54
240-180647-12	WC-WS1-COMP (B6-B10)	65	56
LCS 240-562650/2-A	Lab Control Sample	94	123

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (10-149)	DCBP2 (10-174)
MB 240-562650/1-A	Method Blank	53	93

Surrogate Legend

TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-346721/6-A	Lab Control Sample	68	68
MB 410-346721/1-A	Method Blank	60	63
MB 410-346721/2-A	Method Blank	55	57
MB 410-346721/3-A	Method Blank	57	57
MB 410-346721/4-A	Method Blank	57	59
MB 410-346721/5-A	Method Blank	58	58

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
240-180647-6	WC-WS1-COMP (B1-B5)	70	71
240-180647-12	WC-WS1-COMP (B6-B10)	62	62

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 240-562664/20
Matrix: Solid
Analysis Batch: 562664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	0.916		mg/L		92	74 - 127
1,2-Dichloroethane	1.00	0.867		mg/L		87	72 - 120
2-Butanone (MEK)	2.00	1.68		mg/L		84	68 - 130
Benzene	1.00	0.924		mg/L		92	80 - 121
Carbon tetrachloride	1.00	0.883		mg/L		88	69 - 120
Chlorobenzene	1.00	0.872		mg/L		87	80 - 120
Chloroform	1.00	0.967		mg/L		97	75 - 120
Tetrachloroethene	1.00	0.849		mg/L		85	74 - 120
Trichloroethene	1.00	0.860		mg/L		86	75 - 120
Vinyl chloride	1.00	1.06		mg/L		106	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	107		71 - 121
4-Bromofluorobenzene (Surr)	111		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		76 - 120

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Acetone	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Benzene	ND		0.25	0.042	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Bromoform	ND		0.25	0.23	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 08:45	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.25	0.054	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Styrene	ND		0.25	0.052	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Toluene	ND		0.25	0.24	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 08:45	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/21/23 13:30	02/23/23 08:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	85		56 - 125	02/21/23 13:30	02/23/23 08:45	1
Dibromofluoromethane (Surr)	79		41 - 138	02/21/23 13:30	02/23/23 08:45	1
4-Bromofluorobenzene (Surr)	75		41 - 143	02/21/23 13:30	02/23/23 08:45	1
1,2-Dichloroethane-d4 (Surr)	78		58 - 125	02/21/23 13:30	02/23/23 08:45	1

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 22:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		56 - 125	02/21/23 13:30	02/23/23 22:51	1
Dibromofluoromethane (Surr)	86		41 - 138	02/21/23 13:30	02/23/23 22:51	1
4-Bromofluorobenzene (Surr)	97		41 - 143	02/21/23 13:30	02/23/23 22:51	1
1,2-Dichloroethane-d4 (Surr)	97		58 - 125	02/21/23 13:30	02/23/23 22:51	1

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/24/23 12:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		56 - 125	02/21/23 13:30	02/24/23 12:57	1
Dibromofluoromethane (Surr)	87		41 - 138	02/21/23 13:30	02/24/23 12:57	1
4-Bromofluorobenzene (Surr)	94		41 - 143	02/21/23 13:30	02/24/23 12:57	1
1,2-Dichloroethane-d4 (Surr)	95		58 - 125	02/21/23 13:30	02/24/23 12:57	1

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	1.25	1.14		mg/Kg		91	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.23		mg/Kg		98	64 - 148
1,1,2-Trichloroethane	1.25	1.18		mg/Kg		94	79 - 120
1,1-Dichloroethane	1.25	1.10		mg/Kg		88	74 - 121
1,1-Dichloroethene	1.25	1.09		mg/Kg		87	68 - 141
1,2,4-Trichlorobenzene	1.25	1.12		mg/Kg		90	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.803		mg/Kg		64	52 - 133
Ethylene Dibromide	1.25	1.18		mg/Kg		94	80 - 121
1,2-Dichlorobenzene	1.25	1.13		mg/Kg		90	73 - 120
1,2-Dichloroethane	1.25	1.13		mg/Kg		91	71 - 123
1,2-Dichloropropane	1.25	1.12		mg/Kg		89	76 - 126
1,3-Dichlorobenzene	1.25	1.11		mg/Kg		89	73 - 120
1,4-Dichlorobenzene	1.25	1.10		mg/Kg		88	74 - 120
2-Butanone (MEK)	2.50	2.84		mg/Kg		114	63 - 142
2-Hexanone	2.50	2.34		mg/Kg		93	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.37		mg/Kg		95	62 - 142
Acetone	2.50	2.84		mg/Kg		114	58 - 160
Benzene	1.25	1.16		mg/Kg		93	76 - 121
Dichlorobromomethane	1.25	1.12		mg/Kg		90	71 - 138
Bromoform	1.25	1.02		mg/Kg		82	57 - 140
Bromomethane	1.25	0.639		mg/Kg		51	10 - 171
Carbon disulfide	1.25	0.964		mg/Kg		77	43 - 152
Carbon tetrachloride	1.25	1.14		mg/Kg		91	64 - 144
Chlorobenzene	1.25	1.10		mg/Kg		88	80 - 120
Chloroethane	1.25	0.926		mg/Kg		74	11 - 164
Chloroform	1.25	1.17		mg/Kg		93	78 - 120
Chloromethane	1.25	0.832		mg/Kg		67	41 - 142
cis-1,2-Dichloroethene	1.25	1.12		mg/Kg		90	78 - 124
cis-1,3-Dichloropropene	1.25	1.05		mg/Kg		84	70 - 133
Cyclohexane	1.25	1.13		mg/Kg		90	65 - 137
Chlorodibromomethane	1.25	1.04		mg/Kg		83	68 - 131
Dichlorodifluoromethane	1.25	0.847		mg/Kg		68	21 - 150
Ethylbenzene	1.25	1.16		mg/Kg		93	80 - 120
Isopropylbenzene	1.25	1.20		mg/Kg		96	80 - 130
Methyl acetate	2.50	2.34		mg/Kg		94	60 - 133
Methyl tert-butyl ether	1.25	1.16		mg/Kg		92	70 - 130
Methylcyclohexane	1.25	1.15		mg/Kg		92	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	0.921		mg/Kg		74	71 - 124
Styrene	1.25	1.22		mg/Kg		98	75 - 140
Tetrachloroethene	1.25	1.13		mg/Kg		90	76 - 127
Toluene	1.25	1.13		mg/Kg		91	80 - 120
trans-1,2-Dichloroethene	1.25	1.15		mg/Kg		92	76 - 130
trans-1,3-Dichloropropene	1.25	0.983		mg/Kg		79	61 - 121
Trichloroethene	1.25	1.17		mg/Kg		94	74 - 130
Trichlorofluoromethane	1.25	0.979		mg/Kg		78	50 - 154
Vinyl chloride	1.25	0.976		mg/Kg		78	49 - 146
Xylenes, Total	2.50	2.39		mg/Kg		96	80 - 122
m-Xylene & p-Xylene	1.25	1.18		mg/Kg		94	80 - 122
o-Xylene	1.25	1.21		mg/Kg		97	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	80		41 - 138
4-Bromofluorobenzene (Surr)	75		41 - 143
1,2-Dichloroethane-d4 (Surr)	75		58 - 125

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.34		mg/Kg		134	49 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		56 - 125
Dibromofluoromethane (Surr)	88		41 - 138
4-Bromofluorobenzene (Surr)	96		41 - 143
1,2-Dichloroethane-d4 (Surr)	98		58 - 125

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	1.00	1.06		mg/Kg		106	49 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		56 - 125
Dibromofluoromethane (Surr)	86		41 - 138
4-Bromofluorobenzene (Surr)	97		41 - 143
1,2-Dichloroethane-d4 (Surr)	94		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180647-11 MSD

Matrix: Solid

Analysis Batch: 563234

Client Sample ID: WC-WS1-B10 (3-4)

Prep Type: Total/NA

Prep Batch: 562918

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Vinyl chloride	7.8		1.25	8.46	4	mg/Kg	☼	52	32 - 163	3	38
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	101		56 - 125								
Dibromofluoromethane (Surr)	89		41 - 138								
4-Bromofluorobenzene (Surr)	97		41 - 143								
1,2-Dichloroethane-d4 (Surr)	92		58 - 125								

Lab Sample ID: 240-180647-11 MSD

Matrix: Solid

Analysis Batch: 563303

Client Sample ID: WC-WS1-B10 (3-4)

Prep Type: Total/NA

Prep Batch: 562918

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1,1-Trichloroethane	ND		104	92.3		mg/Kg	☼	89	46 - 144	8	37
1,1,2,2-Tetrachloroethane	ND		104	91.1		mg/Kg	☼	88	26 - 159	9	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		104	95.6		mg/Kg	☼	92	35 - 164	12	37
1,1,2-Trichloroethane	ND		104	96.9		mg/Kg	☼	93	26 - 149	8	40
1,1-Dichloroethane	ND		104	86.0		mg/Kg	☼	83	46 - 135	8	36
1,1-Dichloroethene	ND		104	88.6		mg/Kg	☼	85	44 - 160	6	37
1,2,4-Trichlorobenzene	ND		104	81.4		mg/Kg	☼	78	10 - 120	9	40
1,2-Dibromo-3-Chloropropane	ND		104	63.4		mg/Kg	☼	61	12 - 144	5	40
Ethylene Dibromide	ND		104	95.1		mg/Kg	☼	91	31 - 142	4	40
1,2-Dichlorobenzene	ND		104	88.8		mg/Kg	☼	85	10 - 126	9	40
1,2-Dichloroethane	ND		104	88.6		mg/Kg	☼	85	40 - 132	2	35
1,2-Dichloropropane	ND		104	85.9		mg/Kg	☼	83	45 - 133	5	37
1,3-Dichlorobenzene	ND		104	86.8		mg/Kg	☼	84	10 - 131	11	40
1,4-Dichlorobenzene	ND		104	85.6		mg/Kg	☼	82	10 - 129	9	40
2-Butanone (MEK)	ND		208	203		mg/Kg	☼	98	30 - 157	4	40
2-Hexanone	ND		208	179		mg/Kg	☼	86	20 - 166	5	40
4-Methyl-2-pentanone (MIBK)	ND		208	178		mg/Kg	☼	85	31 - 159	4	40
Acetone	ND		208	217		mg/Kg	☼	105	35 - 167	2	40
Benzene	ND		104	92.6		mg/Kg	☼	89	39 - 134	5	40
Dichlorobromomethane	ND		104	90.6		mg/Kg	☼	87	32 - 146	7	39
Bromoform	ND		104	82.9		mg/Kg	☼	80	12 - 144	7	40
Bromomethane	ND		104	89.0		mg/Kg	☼	86	10 - 161	11	40
Carbon disulfide	ND		104	77.2		mg/Kg	☼	74	24 - 153	11	40
Carbon tetrachloride	ND		104	94.5		mg/Kg	☼	91	37 - 145	11	38
Chlorobenzene	ND		104	88.7		mg/Kg	☼	85	18 - 134	6	40
Chloroethane	ND		104	78.8		mg/Kg	☼	76	14 - 159	15	40
Chloroform	ND		104	95.3		mg/Kg	☼	92	43 - 134	7	36
Chloromethane	ND		104	67.2		mg/Kg	☼	65	32 - 151	13	38
cis-1,2-Dichloroethene	ND		104	95.3		mg/Kg	☼	92	48 - 132	7	37
cis-1,3-Dichloropropene	ND		104	81.4		mg/Kg	☼	78	23 - 139	6	39
Cyclohexane	ND		104	83.8		mg/Kg	☼	81	31 - 147	11	39
Chlorodibromomethane	ND		104	84.1		mg/Kg	☼	81	25 - 143	1	40
Dichlorodifluoromethane	ND		104	71.6		mg/Kg	☼	69	16 - 157	15	40
Ethylbenzene	ND		104	89.0		mg/Kg	☼	86	17 - 137	8	40

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180647-11 MSD

Matrix: Solid

Analysis Batch: 563303

Client Sample ID: WC-WS1-B10 (3-4)

Prep Type: Total/NA

Prep Batch: 562918

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Isopropylbenzene	ND		104	92.4		mg/Kg	☼	89	10 - 146	9	40
Methyl acetate	ND		208	190		mg/Kg	☼	91	13 - 164	3	40
Methyl tert-butyl ether	ND		104	91.6		mg/Kg	☼	88	55 - 134	3	37
Methylcyclohexane	ND		104	88.7		mg/Kg	☼	85	20 - 153	9	40
Methylene Chloride	ND		104	77.9		mg/Kg	☼	75	38 - 145	3	40
Styrene	ND		104	98.0		mg/Kg	☼	94	10 - 149	8	40
Tetrachloroethene	ND		104	91.7		mg/Kg	☼	88	19 - 147	10	40
Toluene	ND		104	89.6		mg/Kg	☼	86	30 - 137	8	40
trans-1,2-Dichloroethene	ND		104	90.8		mg/Kg	☼	87	41 - 145	7	37
trans-1,3-Dichloropropene	ND		104	76.7		mg/Kg	☼	74	19 - 130	9	40
Trichloroethene	ND		104	92.7		mg/Kg	☼	89	21 - 158	5	40
Trichlorofluoromethane	ND		104	87.5		mg/Kg	☼	84	36 - 161	21	40
Xylenes, Total	ND		208	188		mg/Kg	☼	91	17 - 138	9	40
m-Xylene & p-Xylene	ND		104	90.0		mg/Kg	☼	87	10 - 141	8	40
o-Xylene	ND		104	98.4		mg/Kg	☼	95	18 - 139	9	40

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	79		56 - 125
Dibromofluoromethane (Surr)	82		41 - 138
4-Bromofluorobenzene (Surr)	76		41 - 143
1,2-Dichloroethane-d4 (Surr)	74		58 - 125

Lab Sample ID: LB 240-562615/1-A MB

Matrix: Solid

Analysis Batch: 562664

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/20/23 18:22	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/20/23 18:22	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/20/23 18:22	1
Benzene	ND		0.025	0.00042	mg/L			02/20/23 18:22	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/20/23 18:22	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/20/23 18:22	1
Chloroform	ND		0.025	0.00047	mg/L			02/20/23 18:22	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/20/23 18:22	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/20/23 18:22	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/20/23 18:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	95		80 - 120		02/20/23 18:22	1
Dibromofluoromethane (Surr)	105		71 - 121		02/20/23 18:22	1
4-Bromofluorobenzene (Surr)	108		80 - 120		02/20/23 18:22	1
1,2-Dichloroethane-d4 (Surr)	102		76 - 120		02/20/23 18:22	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-562821/9-A
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562821

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/21/23 08:07	02/23/23 13:52	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/21/23 08:07	02/23/23 13:52	1
Pyridine	ND		0.0040	0.00036	mg/L		02/21/23 08:07	02/23/23 13:52	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/21/23 08:07	02/23/23 13:52	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/21/23 08:07	02/23/23 13:52	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/21/23 08:07	02/23/23 13:52	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/21/23 08:07	02/23/23 13:52	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/21/23 08:07	02/23/23 13:52	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	119		46 - 137	02/21/23 08:07	02/23/23 13:52	1
Phenol-d5 (Surr)	59		26 - 120	02/21/23 08:07	02/23/23 13:52	1
Nitrobenzene-d5 (Surr)	74		24 - 120	02/21/23 08:07	02/23/23 13:52	1
2-Fluorophenol (Surr)	71		19 - 120	02/21/23 08:07	02/23/23 13:52	1
2-Fluorobiphenyl (Surr)	97		33 - 120	02/21/23 08:07	02/23/23 13:52	1
2,4,6-Tribromophenol (Surr)	97		10 - 120	02/21/23 08:07	02/23/23 13:52	1

Lab Sample ID: LCS 240-562821/10-A
Matrix: Solid
Analysis Batch: 563180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562821

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0539		mg/L		67	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0746		mg/L		93	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0726		mg/L		91	51 - 120
2,4-Dinitrotoluene	0.0800	0.0658		mg/L		82	58 - 125
Pyridine	0.160	0.0504		mg/L		31	10 - 120
2-Methylphenol	0.0800	0.0613		mg/L		77	45 - 120
Hexachlorobenzene	0.0800	0.0638		mg/L		80	55 - 120
Hexachlorobutadiene	0.0800	0.0582		mg/L		73	41 - 120
Hexachloroethane	0.0800	0.0498		mg/L		62	39 - 120
Nitrobenzene	0.0800	0.0490		mg/L		61	47 - 120
Pentachlorophenol	0.160	0.108		mg/L		68	19 - 132
3 & 4 Methylphenol	0.0800	0.0533		mg/L		67	40 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	105		46 - 137
Phenol-d5 (Surr)	60		26 - 120
Nitrobenzene-d5 (Surr)	67		24 - 120
2-Fluorophenol (Surr)	67		19 - 120
2-Fluorobiphenyl (Surr)	91		33 - 120
2,4,6-Tribromophenol (Surr)	99		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562873/1-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562873

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Atrazine	ND		0.20	0.036	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Carbazole	ND		0.050	0.019	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/21/23 09:46	02/23/23 09:46	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-562873/1-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562873

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Isophorone	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Phenol	ND		0.050	0.0080	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/21/23 09:46	02/23/23 09:46	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/21/23 09:46	02/23/23 09:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137	02/21/23 09:46	02/23/23 09:46	1
Phenol-d5 (Surr)	93		26 - 120	02/21/23 09:46	02/23/23 09:46	1
Nitrobenzene-d5 (Surr)	82		25 - 120	02/21/23 09:46	02/23/23 09:46	1
2-Fluorophenol (Surr)	75		20 - 120	02/21/23 09:46	02/23/23 09:46	1
2-Fluorobiphenyl (Surr)	91		34 - 120	02/21/23 09:46	02/23/23 09:46	1
2,4,6-Tribromophenol (Surr)	53		10 - 120	02/21/23 09:46	02/23/23 09:46	1

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.602		mg/Kg		90	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.558		mg/Kg		84	38 - 120
2,4,5-Trichlorophenol	0.667	0.585		mg/Kg		88	50 - 120
2,4,6-Trichlorophenol	0.667	0.627		mg/Kg		94	50 - 120
2,4-Dichlorophenol	0.667	0.593		mg/Kg		89	50 - 120
2,4-Dimethylphenol	0.667	0.527		mg/Kg		79	24 - 120
2,4-Dinitrophenol	1.33	1.24		mg/Kg		93	19 - 132
2,4-Dinitrotoluene	0.667	0.671		mg/Kg		101	64 - 120
2,6-Dinitrotoluene	0.667	0.640		mg/Kg		96	62 - 120
2-Chloronaphthalene	0.667	0.602		mg/Kg		90	51 - 120
2-Chlorophenol	0.667	0.536		mg/Kg		80	47 - 120
2-Methylnaphthalene	0.667	0.532		mg/Kg		80	38 - 120
2-Methylphenol	0.667	0.530		mg/Kg		79	45 - 120
2-Nitroaniline	0.667	0.627		mg/Kg		94	57 - 120
2-Nitrophenol	0.667	0.551		mg/Kg		83	51 - 120
3,3'-Dichlorobenzidine	1.33	1.20		mg/Kg		90	27 - 199
3-Nitroaniline	0.667	0.487		mg/Kg		73	41 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
4,6-Dinitro-2-methylphenol	1.33	1.25		mg/Kg		94	46 - 126
4-Bromophenyl phenyl ether	0.667	0.579		mg/Kg		87	65 - 120
4-Chloro-3-methylphenol	0.667	0.588		mg/Kg		88	51 - 120
4-Chloroaniline	0.667	0.365		mg/Kg		55	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.540		mg/Kg		81	59 - 120
4-Nitroaniline	0.667	0.601		mg/Kg		90	48 - 128
4-Nitrophenol	1.33	1.33		mg/Kg		99	43 - 120
Acenaphthene	0.667	0.561		mg/Kg		84	52 - 120
Acenaphthylene	0.667	0.575		mg/Kg		86	52 - 120
Acetophenone	0.667	0.550		mg/Kg		82	47 - 120
Anthracene	0.667	0.589		mg/Kg		88	64 - 120
Atrazine	1.33	1.34		mg/Kg		100	71 - 125
Benzaldehyde	1.33	1.13		mg/Kg		85	42 - 120
Benzo[a]anthracene	0.667	0.674		mg/Kg		101	70 - 120
Benzo[a]pyrene	0.667	0.596		mg/Kg		89	63 - 125
Benzo[b]fluoranthene	0.667	0.631		mg/Kg		95	64 - 121
Benzo[g,h,i]perylene	0.667	0.652		mg/Kg		98	62 - 120
Benzo[k]fluoranthene	0.667	0.618		mg/Kg		93	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.556		mg/Kg		83	50 - 120
Bis(2-chloroethyl)ether	0.667	0.494		mg/Kg		74	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.736		mg/Kg		110	63 - 133
Butyl benzyl phthalate	0.667	0.711		mg/Kg		107	66 - 127
Caprolactam	1.33	1.29		mg/Kg		97	67 - 120
Carbazole	0.667	0.595		mg/Kg		89	61 - 129
Chrysene	0.667	0.655		mg/Kg		98	67 - 120
Dibenz(a,h)anthracene	0.667	0.652		mg/Kg		98	62 - 120
Dibenzofuran	0.667	0.559		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.631		mg/Kg		95	61 - 120
Dimethyl phthalate	0.667	0.619		mg/Kg		93	64 - 120
Di-n-butyl phthalate	0.667	0.616		mg/Kg		92	70 - 129
Di-n-octyl phthalate	0.667	0.677		mg/Kg		102	64 - 129
Fluoranthene	0.667	0.600		mg/Kg		90	71 - 124
Fluorene	0.667	0.548		mg/Kg		82	58 - 120
Hexachlorobenzene	0.667	0.557		mg/Kg		83	59 - 120
Hexachlorobutadiene	0.667	0.510		mg/Kg		77	45 - 120
Hexachlorocyclopentadiene	0.667	0.417		mg/Kg		63	10 - 120
Hexachloroethane	0.667	0.496		mg/Kg		74	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.663		mg/Kg		99	65 - 122
Isophorone	0.667	0.584		mg/Kg		88	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.578		mg/Kg		87	48 - 120
N-Nitrosodiphenylamine	0.667	0.574		mg/Kg		86	64 - 120
Naphthalene	0.667	0.511		mg/Kg		77	34 - 120
Nitrobenzene	0.667	0.562		mg/Kg		84	48 - 120
Pentachlorophenol	1.33	0.837		mg/Kg		63	10 - 120
Phenanthrene	0.667	0.583		mg/Kg		87	60 - 120
Phenol	0.667	0.557		mg/Kg		84	48 - 120
Pyrene	0.667	0.687		mg/Kg		103	67 - 120
3 & 4 Methylphenol	0.667	0.572		mg/Kg		86	49 - 120

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-562873/2-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	107		46 - 137
Phenol-d5 (Surr)	90		26 - 120
Nitrobenzene-d5 (Surr)	85		25 - 120
2-Fluorophenol (Surr)	81		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	85		10 - 120

Lab Sample ID: LCS 240-562873/3-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	81		26 - 120
Nitrobenzene-d5 (Surr)	69		25 - 120
2-Fluorophenol (Surr)	67		20 - 120
2-Fluorobiphenyl (Surr)	79		34 - 120
2,4,6-Tribromophenol (Surr)	51		10 - 120

Lab Sample ID: LCS 240-562873/4-A
Matrix: Solid
Analysis Batch: 563114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562873

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	82		26 - 120
Nitrobenzene-d5 (Surr)	69		25 - 120
2-Fluorophenol (Surr)	71		20 - 120
2-Fluorobiphenyl (Surr)	79		34 - 120
2,4,6-Tribromophenol (Surr)	60		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-562822/6-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562822

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/21/23 08:09	02/22/23 11:07	1
Endrin	ND		0.00050	0.0000065	mg/L		02/21/23 08:09	02/22/23 11:07	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/21/23 08:09	02/22/23 11:07	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/21/23 08:09	02/22/23 11:07	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/21/23 08:09	02/22/23 11:07	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/21/23 08:09	02/22/23 11:07	1
Toxaphene	ND		0.020	0.000058	mg/L		02/21/23 08:09	02/22/23 11:07	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	92		10 - 145	02/21/23 08:09	02/22/23 11:07	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-562822/6-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562822

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	92		10 - 145	02/21/23 08:09	02/22/23 11:07	1
Tetrachloro-m-xylene	67		10 - 123	02/21/23 08:09	02/22/23 11:07	1
Tetrachloro-m-xylene	69		10 - 123	02/21/23 08:09	02/22/23 11:07	1

Lab Sample ID: LCS 240-562822/7-A
Matrix: Solid
Analysis Batch: 563004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562822

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin	0.00100	0.000999		mg/L		100	36 - 120
Heptachlor	0.00100	0.000957		mg/L		96	29 - 120
Heptachlor epoxide	0.00100	0.000999		mg/L		100	36 - 120
gamma-BHC (Lindane)	0.00100	0.000920		mg/L		92	23 - 120
Methoxychlor	0.00100	0.00110		mg/L		110	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	90		10 - 145
DCB Decachlorobiphenyl	90		10 - 145
Tetrachloro-m-xylene	69		10 - 123
Tetrachloro-m-xylene	71		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-562650/1-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562650

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1221	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1232	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1242	ND		50	19	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1248	ND		50	17	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1254	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1260	ND		50	21	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1262	ND		50	22	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Aroclor-1268	ND		50	16	ug/Kg		02/20/23 08:20	02/20/23 19:48	1
Polychlorinated biphenyls, Total	ND		50	30	ug/Kg		02/20/23 08:20	02/20/23 19:48	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	53		10 - 149	02/20/23 08:20	02/20/23 19:48	1
DCB Decachlorobiphenyl	93		10 - 174	02/20/23 08:20	02/20/23 19:48	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-562650/2-A
Matrix: Solid
Analysis Batch: 562759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	780		ug/Kg		78	28 - 140
Aroclor-1260	1000	955		ug/Kg		96	39 - 153

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	94		10 - 149
DCB Decachlorobiphenyl	123		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-346721/1-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 04:58	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 04:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	02/21/23 20:16	02/22/23 04:58	1
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	02/21/23 20:16	02/22/23 04:58	1

Lab Sample ID: MB 410-346721/2-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:26	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	55		26 - 136	02/21/23 20:16	02/22/23 05:26	1
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	02/21/23 20:16	02/22/23 05:26	1

Lab Sample ID: MB 410-346721/3-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 05:54	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 05:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	02/21/23 20:16	02/22/23 05:54	1
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	02/21/23 20:16	02/22/23 05:54	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 410-346721/4-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:22	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:22	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136				02/21/23 20:16	02/22/23 06:22	1
2,4-Dichlorophenylacetic acid (Surr)	59		26 - 136				02/21/23 20:16	02/22/23 06:22	1

Lab Sample ID: MB 410-346721/5-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346721

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/21/23 20:16	02/22/23 06:49	1
2,4-D	ND		0.050	0.016	mg/L		02/21/23 20:16	02/22/23 06:49	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				02/21/23 20:16	02/22/23 06:49	1
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				02/21/23 20:16	02/22/23 06:49	1

Lab Sample ID: LCS 410-346721/6-A
Matrix: Solid
Analysis Batch: 346737

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
								Silvex (2,4,5-TP)
2,4-D	0.0502	0.0389	J	mg/L		78	42 - 147	
Surrogate	LCS	LCS	Limits			D	%Rec	%Rec Limits
	%Recovery	Qualifier						
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136					
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136					

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-346502/1-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346502

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/21/23 12:53	02/21/23 16:49	1
Isotope Dilution	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
13C8 PFOA	74		26 - 159				02/21/23 12:53	02/21/23 16:49	1
13C8 PFOS	89		41 - 154				02/21/23 12:53	02/21/23 16:49	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-346502/2-B
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346502

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
							Lower	Upper
Perfluorooctanoic acid	25.0	20.9		ng/g		84	59	131
Perfluorooctanesulfonic acid	23.1	20.9		ng/g		90	61	126

Isotope Dilution	%Recovery	LCS Qualifier	Limits
13C8 PFOA	85		26 - 159
13C8 PFOS	91		41 - 154

Lab Sample ID: 240-180647-12 MS
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: WC-WS1-COMP (B6-B10)
Prep Type: Total/NA
Prep Batch: 346502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
									Lower	Upper
Perfluorooctanoic acid	ND		33.1	29.9		ng/g	☼	90	59	131
Perfluorooctanesulfonic acid	ND		30.6	28.3		ng/g	☼	92	61	126

Isotope Dilution	%Recovery	MS Qualifier	Limits
13C8 PFOA	74		26 - 159
13C8 PFOS	86		41 - 154

Lab Sample ID: 240-180647-12 MSD
Matrix: Solid
Analysis Batch: 346558

Client Sample ID: WC-WS1-COMP (B6-B10)
Prep Type: Total/NA
Prep Batch: 346502

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
									Lower	Upper	RPD	Limit
Perfluorooctanoic acid	ND		33.1	30.7		ng/g	☼	93	59	131	2	30
Perfluorooctanesulfonic acid	ND		30.6	28.6		ng/g	☼	93	61	126	1	30

Isotope Dilution	%Recovery	MSD Qualifier	Limits
13C8 PFOA	57		26 - 159
13C8 PFOS	66		41 - 154

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-562706/2-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562706

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 08:57	1
Barium	ND		0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 08:57	1
Cadmium	0.000220	J	0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 08:57	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 08:57	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 08:57	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 08:57	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 08:57	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-562706/3-A
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	1.99		mg/L		99	50 - 150
Barium	2.00	1.87		mg/L		93	50 - 150
Cadmium	1.00	0.976		mg/L		98	50 - 150
Chromium	1.00	0.958		mg/L		96	50 - 150
Lead	1.00	0.916		mg/L		92	50 - 150
Selenium	2.00	2.00		mg/L		100	50 - 150
Silver	0.100	0.102		mg/L		102	50 - 150

Lab Sample ID: LB 240-562607/1-B
Matrix: Solid
Analysis Batch: 562870

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562706

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/20/23 14:00	02/21/23 08:52	1
Barium	0.00326	J	0.50	0.0013	mg/L		02/20/23 14:00	02/21/23 08:52	1
Cadmium	ND		0.050	0.00020	mg/L		02/20/23 14:00	02/21/23 08:52	1
Chromium	ND		0.050	0.0040	mg/L		02/20/23 14:00	02/21/23 08:52	1
Lead	ND		0.050	0.0028	mg/L		02/20/23 14:00	02/21/23 08:52	1
Selenium	ND		0.050	0.0060	mg/L		02/20/23 14:00	02/21/23 08:52	1
Silver	ND		0.050	0.00062	mg/L		02/20/23 14:00	02/21/23 08:52	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-562707/2-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562707

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:35	1

Lab Sample ID: LCS 240-562707/3-A
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562707

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00481		mg/L		96	80 - 120

Lab Sample ID: LB 240-562607/1-C
Matrix: Solid
Analysis Batch: 562913

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 562707

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/20/23 14:00	02/21/23 10:33	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180647-7 DU

Matrix: Solid

Analysis Batch: 562608

Client Sample ID: WC-WS1-B6 (4-5)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	75.8		70.5		%		7	20
Percent Moisture	24.2		29.5		%		20	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

GC/MS VOA

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	Composite	
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	Composite	

Leach Batch: 562615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	1311	562584
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	1311	562584
LB 240-562615/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 562664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	8260D	562615
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	8260D	562615
LB 240-562615/1-A MB	Method Blank	TCLP	Solid	8260D	562615
LCS 240-562664/20	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 562918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	5035	
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	5035	
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	5035	
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	5035	
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	5035	
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	5035	
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	5035	
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	5035	
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	5035	
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	5035	
MB 240-562918/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-180647-8 MS	WC-WS1-B7 (5-6)	Total/NA	Solid	5035	
240-180647-8 MSD	WC-WS1-B7 (5-6)	Total/NA	Solid	5035	
240-180647-11 MS	WC-WS1-B10 (3-4)	Total/NA	Solid	5035	
240-180647-11 MSD	WC-WS1-B10 (3-4)	Total/NA	Solid	5035	

Analysis Batch: 563103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	8260D	562918
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	8260D	562918
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	8260D	562918
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	8260D	562918
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	8260D	562918
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	8260D	562918
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	8260D	562918
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918

Analysis Batch: 563234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	8260D	562918
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	8260D	562918

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

GC/MS VOA (Continued)

Analysis Batch: 563234 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	8260D	562918
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	8260D	562918
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	8260D	562918
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	8260D	562918
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	8260D	562918
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	8260D	562918
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918
240-180647-11 MS	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918
240-180647-11 MSD	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918

Analysis Batch: 563303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	8260D	562918
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	8260D	562918
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918
240-180647-11 MS	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918
240-180647-11 MSD	WC-WS1-B10 (3-4)	Total/NA	Solid	8260D	562918

Analysis Batch: 563317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	8260D	562918
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918
240-180647-8 MS	WC-WS1-B7 (5-6)	Total/NA	Solid	8260D	562918
240-180647-8 MSD	WC-WS1-B7 (5-6)	Total/NA	Solid	8260D	562918

GC/MS Semi VOA

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	Composite	
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	Composite	

Leach Batch: 562606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	1311	562584
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	1311	562584

Prep Batch: 562821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	3510C	562606
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	3510C	562606
MB 240-562821/9-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562821/10-A	Lab Control Sample	Total/NA	Solid	3510C	

Prep Batch: 562873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	3540C	
240-180647-1 - RA	WC-WS1-B1 (5-6)	Total/NA	Solid	3540C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

GC/MS Semi VOA (Continued)

Prep Batch: 562873 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	3540C	
240-180647-2 - RA	WC-WS1-B2 (3-4)	Total/NA	Solid	3540C	
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	3540C	
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	3540C	
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	3540C	
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	3540C	
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	3540C	
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	3540C	
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	3540C	
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	3540C	
MB 240-562873/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-562873/2-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562873/3-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-562873/4-A	Lab Control Sample	Total/NA	Solid	3540C	

Analysis Batch: 563114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-562873/1-A	Method Blank	Total/NA	Solid	8270E	562873
LCS 240-562873/2-A	Lab Control Sample	Total/NA	Solid	8270E	562873
LCS 240-562873/3-A	Lab Control Sample	Total/NA	Solid	8270E	562873
LCS 240-562873/4-A	Lab Control Sample	Total/NA	Solid	8270E	562873

Analysis Batch: 563164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	8270E	562873
240-180647-1 - RA	WC-WS1-B1 (5-6)	Total/NA	Solid	8270E	562873
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	8270E	562873
240-180647-2 - RA	WC-WS1-B2 (3-4)	Total/NA	Solid	8270E	562873
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	8270E	562873
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	8270E	562873
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	8270E	562873
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	8270E	562873
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	8270E	562873
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	8270E	562873
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	8270E	562873
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	8270E	562873

Analysis Batch: 563180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	8270E	562821
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	8270E	562821
MB 240-562821/9-A	Method Blank	Total/NA	Solid	8270E	562821
LCS 240-562821/10-A	Lab Control Sample	Total/NA	Solid	8270E	562821

GC Semi VOA

Leach Batch: 346499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	1311	
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

GC Semi VOA

Prep Batch: 346721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	8151A	346499
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	8151A	346499
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 346737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	8151A	346721
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	8151A	346721
MB 410-346721/1-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/2-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/3-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/4-A	Method Blank	Total/NA	Solid	8151A	346721
MB 410-346721/5-A	Method Blank	Total/NA	Solid	8151A	346721
LCS 410-346721/6-A	Lab Control Sample	Total/NA	Solid	8151A	346721

Composite Batch: 562584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	Composite	
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	Composite	

Composite Batch: 562585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	Composite	
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	Composite	

Leach Batch: 562606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	1311	562584
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	1311	562584

Prep Batch: 562650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	3546	562585
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	3546	562585
MB 240-562650/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 562759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	8082A	562650
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	8082A	562650
MB 240-562650/1-A	Method Blank	Total/NA	Solid	8082A	562650
LCS 240-562650/2-A	Lab Control Sample	Total/NA	Solid	8082A	562650

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

GC Semi VOA

Prep Batch: 562822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	3510C	562606
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	3510C	562606
MB 240-562822/6-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-562822/7-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 563004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	TCLP	Solid	8081B	562822
240-180647-12	WC-WS1-COMP (B6-B10)	TCLP	Solid	8081B	562822
MB 240-562822/6-A	Method Blank	Total/NA	Solid	8081B	562822
LCS 240-562822/7-A	Lab Control Sample	Total/NA	Solid	8081B	562822

LCMS

Prep Batch: 346502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	537 (mod)	
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 (mod)	
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	
240-180647-12 MS	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 (mod)	
240-180647-12 MSD	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 (mod)	

Cleanup Batch: 346507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	Extract Aliquot	346502
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	Extract Aliquot	346502
MB 410-346502/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	346502
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	346502
240-180647-12 MS	WC-WS1-COMP (B6-B10)	Total/NA	Solid	Extract Aliquot	346502
240-180647-12 MSD	WC-WS1-COMP (B6-B10)	Total/NA	Solid	Extract Aliquot	346502

Analysis Batch: 346558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	537 IDA	346507
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 IDA	346507
MB 410-346502/1-B	Method Blank	Total/NA	Solid	537 IDA	346507
LCS 410-346502/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	346507
240-180647-12 MS	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 IDA	346507
240-180647-12 MSD	WC-WS1-COMP (B6-B10)	Total/NA	Solid	537 IDA	346507

Metals

Leach Batch: 562607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	TCLP	Solid	1311	
240-180647-2	WC-WS1-B2 (3-4)	TCLP	Solid	1311	
240-180647-3	WC-WS1-B3 (3-4)	TCLP	Solid	1311	
240-180647-4	WC-WS1-B4 (4-5)	TCLP	Solid	1311	
240-180647-5	WC-WS1-B5 (2-3)	TCLP	Solid	1311	
240-180647-7	WC-WS1-B6 (4-5)	TCLP	Solid	1311	
240-180647-8	WC-WS1-B7 (5-6)	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Metals (Continued)

Leach Batch: 562607 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-9	WC-WS1-B8 (4-5)	TCLP	Solid	1311	
240-180647-10	WC-WS1-B9 (5-6)	TCLP	Solid	1311	
240-180647-11	WC-WS1-B10 (3-4)	TCLP	Solid	1311	
LB 240-562607/1-B	Method Blank	TCLP	Solid	1311	
LB 240-562607/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 562706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	TCLP	Solid	3010A	562607
240-180647-2	WC-WS1-B2 (3-4)	TCLP	Solid	3010A	562607
240-180647-3	WC-WS1-B3 (3-4)	TCLP	Solid	3010A	562607
240-180647-4	WC-WS1-B4 (4-5)	TCLP	Solid	3010A	562607
240-180647-5	WC-WS1-B5 (2-3)	TCLP	Solid	3010A	562607
240-180647-7	WC-WS1-B6 (4-5)	TCLP	Solid	3010A	562607
240-180647-8	WC-WS1-B7 (5-6)	TCLP	Solid	3010A	562607
240-180647-9	WC-WS1-B8 (4-5)	TCLP	Solid	3010A	562607
240-180647-10	WC-WS1-B9 (5-6)	TCLP	Solid	3010A	562607
240-180647-11	WC-WS1-B10 (3-4)	TCLP	Solid	3010A	562607
LB 240-562607/1-B	Method Blank	TCLP	Solid	3010A	562607
MB 240-562706/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-562706/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 562707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	TCLP	Solid	7470A	562607
240-180647-2	WC-WS1-B2 (3-4)	TCLP	Solid	7470A	562607
240-180647-3	WC-WS1-B3 (3-4)	TCLP	Solid	7470A	562607
240-180647-4	WC-WS1-B4 (4-5)	TCLP	Solid	7470A	562607
240-180647-5	WC-WS1-B5 (2-3)	TCLP	Solid	7470A	562607
240-180647-7	WC-WS1-B6 (4-5)	TCLP	Solid	7470A	562607
240-180647-8	WC-WS1-B7 (5-6)	TCLP	Solid	7470A	562607
240-180647-9	WC-WS1-B8 (4-5)	TCLP	Solid	7470A	562607
240-180647-10	WC-WS1-B9 (5-6)	TCLP	Solid	7470A	562607
240-180647-11	WC-WS1-B10 (3-4)	TCLP	Solid	7470A	562607
LB 240-562607/1-C	Method Blank	TCLP	Solid	7470A	562607
MB 240-562707/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-562707/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 562870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	TCLP	Solid	6010D	562706
240-180647-2	WC-WS1-B2 (3-4)	TCLP	Solid	6010D	562706
240-180647-3	WC-WS1-B3 (3-4)	TCLP	Solid	6010D	562706
240-180647-4	WC-WS1-B4 (4-5)	TCLP	Solid	6010D	562706
240-180647-5	WC-WS1-B5 (2-3)	TCLP	Solid	6010D	562706
240-180647-7	WC-WS1-B6 (4-5)	TCLP	Solid	6010D	562706
240-180647-8	WC-WS1-B7 (5-6)	TCLP	Solid	6010D	562706
240-180647-9	WC-WS1-B8 (4-5)	TCLP	Solid	6010D	562706
240-180647-10	WC-WS1-B9 (5-6)	TCLP	Solid	6010D	562706
240-180647-11	WC-WS1-B10 (3-4)	TCLP	Solid	6010D	562706
LB 240-562607/1-B	Method Blank	TCLP	Solid	6010D	562706

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Metals (Continued)

Analysis Batch: 562870 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-562706/2-A	Method Blank	Total/NA	Solid	6010D	562706
LCS 240-562706/3-A	Lab Control Sample	Total/NA	Solid	6010D	562706

Analysis Batch: 562913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	TCLP	Solid	7470A	562707
240-180647-2	WC-WS1-B2 (3-4)	TCLP	Solid	7470A	562707
240-180647-3	WC-WS1-B3 (3-4)	TCLP	Solid	7470A	562707
240-180647-4	WC-WS1-B4 (4-5)	TCLP	Solid	7470A	562707
240-180647-5	WC-WS1-B5 (2-3)	TCLP	Solid	7470A	562707
240-180647-7	WC-WS1-B6 (4-5)	TCLP	Solid	7470A	562707
240-180647-8	WC-WS1-B7 (5-6)	TCLP	Solid	7470A	562707
240-180647-9	WC-WS1-B8 (4-5)	TCLP	Solid	7470A	562707
240-180647-10	WC-WS1-B9 (5-6)	TCLP	Solid	7470A	562707
240-180647-11	WC-WS1-B10 (3-4)	TCLP	Solid	7470A	562707
LB 240-562607/1-C	Method Blank	TCLP	Solid	7470A	562707
MB 240-562707/2-A	Method Blank	Total/NA	Solid	7470A	562707
LCS 240-562707/3-A	Lab Control Sample	Total/NA	Solid	7470A	562707

General Chemistry

Analysis Batch: 562608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-1	WC-WS1-B1 (5-6)	Total/NA	Solid	Moisture	
240-180647-2	WC-WS1-B2 (3-4)	Total/NA	Solid	Moisture	
240-180647-3	WC-WS1-B3 (3-4)	Total/NA	Solid	Moisture	
240-180647-4	WC-WS1-B4 (4-5)	Total/NA	Solid	Moisture	
240-180647-5	WC-WS1-B5 (2-3)	Total/NA	Solid	Moisture	
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	Moisture	
240-180647-7	WC-WS1-B6 (4-5)	Total/NA	Solid	Moisture	
240-180647-8	WC-WS1-B7 (5-6)	Total/NA	Solid	Moisture	
240-180647-9	WC-WS1-B8 (4-5)	Total/NA	Solid	Moisture	
240-180647-10	WC-WS1-B9 (5-6)	Total/NA	Solid	Moisture	
240-180647-11	WC-WS1-B10 (3-4)	Total/NA	Solid	Moisture	
240-180647-12	WC-WS1-COMP (B6-B10)	Total/NA	Solid	Moisture	
240-180647-7 DU	WC-WS1-B6 (4-5)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B1 (5-6)

Date Collected: 02/18/23 13:15

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180647-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:46
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:09
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B1 (5-6)

Date Collected: 02/18/23 13:15

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180647-1

Matrix: Solid

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 03:18
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1000	563103	CS	EET CAN	02/23/23 12:41
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563164	MRU	EET CAN	02/23/23 12:16
Total/NA	Prep	3540C	RA		562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E	RA	100	563164	MRU	EET CAN	02/23/23 16:10

Client Sample ID: WC-WS1-B2 (3-4)

Date Collected: 02/18/23 13:35

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180647-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:51
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:11
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B2 (3-4)

Date Collected: 02/18/23 13:35

Date Received: 02/18/23 19:05

Lab Sample ID: 240-180647-2

Matrix: Solid

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 03:43
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		125	563303	CS	EET CAN	02/24/23 15:20
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563164	MRU	EET CAN	02/23/23 12:40

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B2 (3-4)

Lab Sample ID: 240-180647-2

Date Collected: 02/18/23 13:35

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3540C	RA		562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E	RA	100	563164	MRU	EET CAN	02/23/23 16:33

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 10:55
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:13
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B3 (3-4)

Lab Sample ID: 240-180647-3

Date Collected: 02/18/23 13:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 04:07
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1000	563103	CS	EET CAN	02/23/23 13:24
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		200	563164	MRU	EET CAN	02/23/23 13:03

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:00
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:15
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B4 (4-5)

Lab Sample ID: 240-180647-4

Date Collected: 02/18/23 14:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 72.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 04:31
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		100	563103	CS	EET CAN	02/23/23 13:46
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		100	563164	MRU	EET CAN	02/23/23 13:26

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:04
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:17
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B5 (2-3)

Lab Sample ID: 240-180647-5

Date Collected: 02/18/23 14:05

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 04:55
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		250	563103	CS	EET CAN	02/23/23 14:07
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		50	563164	MRU	EET CAN	02/23/23 13:50

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562615	DRJ	EET CAN	02/19/23 16:35 - 02/20/23 08:55 ¹
TCLP	Analysis	8260D		1	562664	HMB	EET CAN	02/20/23 20:40
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562821	SDE	EET CAN	02/21/23 08:07
TCLP	Analysis	8270E		4	563180	JMG	EET CAN	02/23/23 16:16

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562822	SDE	EET CAN	02/21/23 08:09
TCLP	Analysis	8081B		1	563004	BPM	EET CAN	02/22/23 12:08
TCLP	Leach	1311			346499	UNWS	ELLE	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 10:33
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562585	DRJ	EET CAN	02/19/23 10:38
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 02:03
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 17:56

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:09
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:24
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B6 (4-5)

Lab Sample ID: 240-180647-7

Date Collected: 02/18/23 14:15

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 05:20
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		200	563103	CS	EET CAN	02/23/23 14:28
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		100	563164	MRU	EET CAN	02/23/23 14:13

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:13
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:26
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B7 (5-6)

Lab Sample ID: 240-180647-8

Date Collected: 02/18/23 14:25

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		2.5	563317	SAM	EET CAN	02/24/23 17:01
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1000	563103	CS	EET CAN	02/23/23 14:49
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		25	563164	MRU	EET CAN	02/23/23 14:36

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:18
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:28
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B8 (4-5)

Lab Sample ID: 240-180647-9

Date Collected: 02/18/23 14:30

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 06:08
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		50	563303	CS	EET CAN	02/24/23 15:42
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		25	563164	MRU	EET CAN	02/23/23 15:00

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:22
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:30
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B9 (5-6)

Lab Sample ID: 240-180647-10

Date Collected: 02/18/23 14:45

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 73.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 06:32
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		100	563103	CS	EET CAN	02/23/23 15:32
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		25	563164	MRU	EET CAN	02/23/23 15:23

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3010A			562706	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	6010D		1	562870	RKT	EET CAN	02/21/23 11:35
TCLP	Leach	1311			562607	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	7470A			562707	MRL	EET CAN	02/20/23 14:00
TCLP	Analysis	7470A		1	562913	MRL	EET CAN	02/21/23 11:32
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-B10 (3-4)

Lab Sample ID: 240-180647-11

Date Collected: 02/18/23 14:55

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563234	CS	EET CAN	02/24/23 06:57
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		66.667	563303	CS	EET CAN	02/24/23 16:03
Total/NA	Prep	3540C			562873	BMB	EET CAN	02/21/23 09:46
Total/NA	Analysis	8270E		20	563164	MRU	EET CAN	02/23/23 15:46

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562615	DRJ	EET CAN	02/19/23 16:35 - 02/20/23 08:55 ¹
TCLP	Analysis	8260D		1	562664	HMB	EET CAN	02/20/23 21:03
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562821	SDE	EET CAN	02/21/23 08:07
TCLP	Analysis	8270E		1	563180	JMG	EET CAN	02/23/23 15:28
TCLP	Composite	Composite			562584	DRJ	EET CAN	02/19/23 10:38
TCLP	Leach	1311			562606	DRJ	EET CAN	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	3510C			562822	SDE	EET CAN	02/21/23 08:09
TCLP	Analysis	8081B		1	563004	BPM	EET CAN	02/22/23 12:20
TCLP	Leach	1311			346499	UNWS	ELLE	02/19/23 15:50 - 02/20/23 08:50 ¹
TCLP	Prep	8151A			346721	UKL2	ELLE	02/21/23 20:16
TCLP	Analysis	8151A		1	346737	UAMZ	ELLE	02/22/23 11:01
Total/NA	Analysis	Moisture		1	562608	JMB	EET CAN	02/19/23 15:02

Client Sample ID: WC-WS1-COMP (B6-B10)

Lab Sample ID: 240-180647-12

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 74.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562585	DRJ	EET CAN	02/19/23 10:38
Total/NA	Prep	3546			562650	AJ	EET CAN	02/20/23 08:20
Total/NA	Analysis	8082A		1	562759	MBB	EET CAN	02/21/23 02:20
Total/NA	Prep	537 (mod)			346502	Q5YX	ELLE	02/21/23 12:53
Total/NA	Cleanup	Extract Aliquot			346507	Q5YX	ELLE	02/21/23 13:13
Total/NA	Analysis	537 IDA		1	346558	UUV6	ELLE	02/21/23 18:07

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

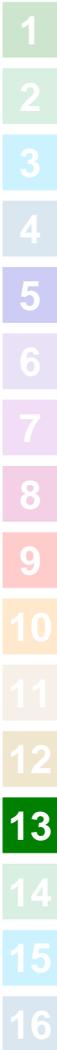
Job ID: 240-180647-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

645236



Environment Testing
America

TAL-8210

Address:

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager:		Site Contact:		Date:										
Company Name:		Tell/Email:		Lab Contact:		Carrier:										
Address:		Analysis Turnaround Time		COC No.:		COCs										
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Sampler:		For Lab Use Only:										
Phone:		TAT if different from Below		Walk-in Client:		Walk-in Client:										
Fax:		2 weeks		Lab Sampling:		Lab Sampling:										
Project Name:		1 week		Job / SDG No.:		Job / SDG No.:										
Site:		2 days		Sample Specific Notes:		Sample Specific Notes:										
P O #		1 day														
Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total VOC	Total SVOC	TCLP Metals	PFAS / PFCA	TCLP VOC	TCLP SVOC	TCLP PEST	TCLP Herbs	Total Pubs
WC-WS1-B1 (5-6)	2/18/23	1315	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B2 (3-4)	2/18/23	1335	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B3 (3-4)	2/18/23	1345	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B4 (4-5)	2/18/23	1400	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B5 (2-3)	2/18/23	1405	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-COMP (B1-B5)	2/18/23		LAB COMP	S	X	N	N									
WC-WS1-B6 (4-5)	2/18/23	1415	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B7 (5-6)	2/18/23	1425	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B8 (4-5)	2/18/23	1430	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B9 (5-6)	2/18/23	1445	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-B10 (3-4)	2/18/23	1455	G	S	7	N	N	X	X	X	X	X	X	X	X	X
WC-WS1-COMP (B6-B10)	2/18/23		LAB COMP	S	7	N	N									



Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 5 GRAB SAMPLES

Custody Seal No.: _____
 Relinquished by: _____ Date/Time: _____
 Relinquished by: _____ Date/Time: _____
 Relinquished by: _____ Date/Time: _____

Company: _____
 Received by: _____ Date/Time: _____
 Received by: _____ Date/Time: _____
 Received in Laboratory by: _____ Date/Time: _____

Therm ID No.: _____
 Date/Time: 2-18-23 1905
 Date/Time: _____
 Date/Time: _____



Barberton Facility

Client Arcadis Site Name NS RR - ER

Cooler unpacked by:

Cooler Received on 2-18-23 Opened on 2-18-23

me

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 126
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No NA
- 15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins Canton

180 S. Van Buren Avenue
 Barberton, OH 44203
 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	DelMonico, Michael		240-164099.1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note):			Job #: 240-180647-1
Address: 2425 New Holland Pike,		Due Date Requested: 2/22/2023	Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor T - TSP Dodecahydrate H - Ascorbic Acid U - Acetone I - Ice V - MCAA J - DI Water W - pH 4-5 K - EDTA Y - Trizma L - EDA Z - other (specify)
City: Lancaster		TAT Requested (days):			
State, Zip: PA, 17601		PO #:	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) PFC_IDA/Shake_SonicBath PFOA, PFOS 8151A/1311_T TCLP Analyte List		Total Number of containers
Phone: 717-656-2300(Tel)		WO #:			
Email:		Project #: 24030745	Special Instructions/Note:		
Project Name: NS East Palestine		SSOW#:			
Site:		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	MATRIX (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)
Sample Identification - Client ID (Lab ID)		Preservation Code:			
WC-WS1-COMP (B1-B5) (240-180647-6)		2/18/23	Eastern	Solid	
WC-WS1-COMP (B6-B10) (240-180647-12)		2/18/23	Eastern	Solid	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>					
Possible Hazard Identification			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
Unconfirmed			<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time: 2/20/23 1500	Company: FEINX	Received by: <i>[Signature]</i>	
Relinquished by:		Date/Time:	Company:	Received by:	
Relinquished by:		Date/Time:	Company:	Received by: <i>[Signature]</i>	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) C and Other Remarks: 2.1	



Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180647-1

Login Number: 180647

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C8PFOA	C8PFOS
		(26-159)	(41-154)
240-180647-6	WC-WS1-COMP (B1-B5)	65	83
240-180647-12	WC-WS1-COMP (B6-B10)	69	74
240-180647-12 MS	WC-WS1-COMP (B6-B10)	74	86
240-180647-12 MSD	WC-WS1-COMP (B6-B10)	57	66
LCS 410-346502/2-B	Lab Control Sample	85	91
MB 410-346502/1-B	Method Blank	74	89

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/10/2023 9:32:09 AM Revision 1

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180647-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/10/2023 9:32:09 AM
Revision 1

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	10
QC Association Summary	12
Lab Chronicle	13
Certification Summary	14
Chain of Custody	16
Receipt Checklists	19
Isotope Dilution Summary	20

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Job ID: 240-180647-2

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-180647-2**

Receipt

The samples were received on 2/18/2023 7:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.6°C and 4.6°C

Report revised on 3/10/2023 to report Total Dioxins calculations.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180647-6	WC-WS1-COMP (B1-B5)	Solid	02/18/23 00:00	02/18/23 19:05

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-2

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	290		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	330		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	17		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	94		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	55		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	41		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	76		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	19		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	49		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	28		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	21		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	48		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	57		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	2.1		1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	20		1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
OCDD	1400		12	2.5	ng/Kg	1	✳	8290A	Total/NA
OCDF	650		12	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	340		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	590		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	630		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	550		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	220		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	540		6.2	2.5	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	97	I	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	540		1.2	0.25	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	290		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,4,6,7,8-HpCDF	330		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,4,7,8-HxCDD	17		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,4,7,8-HxCDF	94		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,4,7,8,9-HpCDF	55		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,6,7,8-HxCDD	41		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,6,7,8-HxCDF	76		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,7,8-PeCDD	19		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,7,8-PeCDF	49		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,7,8,9-HxCDD	28		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
1,2,3,7,8,9-HxCDF	21		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
2,3,4,6,7,8-HxCDF	48		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
2,3,4,7,8-PeCDF	57		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
2,3,7,8-TCDD	2.1		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
2,3,7,8-TCDF	20		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
OCDD	1400		12	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
OCDF	650		12	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total HxCDD	340		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total HxCDF	590		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total HpCDD	630		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total HpCDF	550		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total PeCDD	220		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total PeCDF	540		6.2	2.5	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total TCDD	97	I	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1
Total TCDF	540		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/08/23 02:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	67		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-OCDD	68		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-2,3,7,8-TCDF	73		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-2,3,7,8-TCDD	69		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-2,3,4,7,8-PeCDF	71		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-2,3,4,6,7,8-HxCDF	74		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,7,8,9-HxCDF	73		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,7,8,9-HxCDD	76		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,7,8-PeCDF	69		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,7,8-PeCDD	65		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,6,7,8-HxCDF	74		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,6,7,8-HxCDD	74		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,4,7,8,9-HpCDF	72		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,4,7,8-HxCDF	74		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,4,7,8-HxCDD	73		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,4,6,7,8-HpCDF	73		40 - 135	03/06/23 12:43	03/08/23 02:50	1
13C-1,2,3,4,6,7,8-HpCDD	73		40 - 135	03/06/23 12:43	03/08/23 02:50	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-350542/1-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350542

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,6,7,8-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8,9-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDD	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDF	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	89		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-OCDD	88		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDD	68		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,6,7,8-HxCDF	81		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDD	83		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDD	69		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8,9-HpCDF	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDD	78		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-350542/2-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDD	100	93.6		ng/Kg		94	77 - 127
1,2,3,4,6,7,8-HpCDF	100	94.3		ng/Kg		94	77 - 127
1,2,3,4,7,8-HxCDD	100	98.7		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDF	100	97.8		ng/Kg		98	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.8		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	103		ng/Kg		103	76 - 127
1,2,3,6,7,8-HxCDF	100	97.3		ng/Kg		97	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	101		ng/Kg		101	75 - 129
1,2,3,7,8,9-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,7,8,9-HxCDF	100	97.4		ng/Kg		97	76 - 126
2,3,4,6,7,8-HxCDF	100	94.2		ng/Kg		94	78 - 128
2,3,4,7,8-PeCDF	100	104		ng/Kg		104	75 - 131
2,3,7,8-TCDD	20.0	19.9		ng/Kg		99	68 - 142
2,3,7,8-TCDF	20.0	17.7		ng/Kg		88	70 - 133
OCDD	200	202		ng/Kg		101	77 - 125
OCDF	200	199		ng/Kg		99	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	91		40 - 135
13C-OCDD	92		40 - 135
13C-2,3,7,8-TCDF	75		40 - 135
13C-2,3,7,8-TCDD	72		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-2,3,4,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDD	89		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	92		40 - 135
13C-1,2,3,4,7,8-HxCDF	83		40 - 135
13C-1,2,3,4,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	91		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	90		40 - 135

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Specialty Organics

Prep Batch: 350542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-350542/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 350921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-350542/1-A	Method Blank	Total/NA	Solid	8290A	350542
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	8290A	350542

Analysis Batch: 351132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180647-6	WC-WS1-COMP (B1-B5)	Total/NA	Solid	8290A	350542

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Client Sample ID: WC-WS1-COMP (B1-B5)

Lab Sample ID: 240-180647-6

Date Collected: 02/18/23 00:00

Matrix: Solid

Date Received: 02/18/23 19:05

Percent Solids: 78.6

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/08/23 02:50

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180647-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Chain of Custody Record

645236



Environment Testing
America

TAL-8210

Address:

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager:		Site Contact:		Date:									
Company Name:		Tell/Email:		Lab Contact:		Carrier:									
Address:		Analysis Turnaround Time		COC No.:		COCs									
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Sampler:		For Lab Use Only:									
Phone:		TAT if different from Below		Walk-in Client:		Walk-in Client:									
Fax:		2 weeks		Lab Sampling:		Lab Sampling:									
Project Name:		1 week		Job / SDG No.:		Job / SDG No.:									
Site:		2 days		Sample Specific Notes:		Sample Specific Notes:									
PO #		1 day													
Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Total VOC	Total SVOC	TCMP Metals	PCAS/PCOA	TCMP VOC	TCMP SVOC	TCMP Herb	TCMP Pubs
WC-WS1-B1 (5-6)	2/18/23	1315	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B2 (3-4)	2/18/23	1335	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B3 (3-4)	2/18/23	1345	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B4 (4-5)	2/18/23	1400	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B5 (2-3)	2/18/23	1405	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-COMP (B1-B5)	2/18/23		LAB COMP	S	X	N									
WC-WS1-B6 (4-5)	2/18/23	1415	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B7 (5-6)	2/18/23	1425	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B8 (4-5)	2/18/23	1430	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B9 (5-6)	2/18/23	1445	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-B10 (3-4)	2/18/23	1455	G	S	7	N	X	X	X	X	X	X	X	X	X
WC-WS1-COMP (B6-B10)	2/18/23		LAB COMP	S	7	N									



Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 5 GRAB SAMPLES

Custody Seal No.:	Company:	Received by:	Date/Time:
		<i>[Signature]</i>	2-18-23 1905
Relinquished by:	Company:	Received by:	Date/Time:
Relinquished by:	Company:	Received in Laboratory by:	Date/Time:



Barberton Facility

Client Arcadis Site Name NS RR - ER

Cooler unpacked by:

Cooler Received on 2-18-23 Opened on 2-18-23

(Signature)

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # E-C Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 126 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by:

Blank lines for Chain of Custody and Sample Discrepancies.

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180647-2

Login Number: 180647

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/21/23 09:17 AM

Creator: McCaskey, Jonathan

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180647-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-180647-6	WC-WS1-COMP (B1-B5)	67	68	73	69	71	74	73	76
LCS 410-350542/2-A	Lab Control Sample	91	92	75	72	77	87	87	89
MB 410-350542/1-A	Method Blank	89	88	72	68	76	81	82	83

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-180647-6	WC-WS1-COMP (B1-B5)	69	65	74	74	72	74	73	73
LCS 410-350542/2-A	Lab Control Sample	76	70	87	84	92	83	84	91
MB 410-350542/1-A	Method Blank	72	69	84	80	86	79	78	85

		HpCDD (40-135)
Lab Sample ID	Client Sample ID	
240-180647-6	WC-WS1-COMP (B1-B5)	73
LCS 410-350542/2-A	Lab Control Sample	90
MB 410-350542/1-A	Method Blank	86

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/28/2023 3:52:00 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180684-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/28/2023 3:52:00 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	24
Surrogate Summary	113
QC Sample Results	118
QC Association Summary	152
Lab Chronicle	165
Certification Summary	180
Chain of Custody	182
Receipt Checklists	186
Isotope Dilution Summary	187

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Glossary (Continued)

Abbreviation **These commonly used abbreviations may or may not be present in this report.**

QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Job ID: 240-180684-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180684-1

Comments

No additional comments.

Receipt

The samples were received on 2/20/2023 9:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 0.2° C, 0.5° C, 1.8° C, 2. C and 3.1° C.

GC/MS VOA

Method 5035: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-WS-NORTH-01 (4-5) (240-180684-1), WC-WS-NORTH-02 (6-7) (240-180684-2), WC-WS-NORTH-03 (7-8) (240-180684-3), WC-WS-NORTH-04 (4-5) (240-180684-4), WC-WS-NORTH-05 (5-6) (240-180684-5), WC-WS-NORTH-06 (5-6) (240-180684-7), WC-WS-NORTH-07 (3-4) (240-180684-8), WC-WS-NORTH-08 (3-4) (240-180684-9), WC-WS-NORTH-09 (3-4) (240-180684-10), WC-WS-NORTH-10 (2-3) (240-180684-11), WC-SB2650-N. DITCH (240-180684-12), WC-SB1692-N. DITCH (240-180684-14), WC-SB2598-N. DITCH (240-180684-15), WC-SB1852-N. DITCH (240-180684-16), WC-SB1865-N. DITCH (240-180684-17), WC-SB2621-N. DITCH (240-180684-19), WC-SB1634-N. DITCH (240-180684-20), WC-SB2624-N. DITCH (240-180684-21), WC-SB2474-N. DITCH (240-180684-22), WC-SB2405-N. DITCH (240-180684-23), WC-RT1538A-ST. SWEEPINGS (240-180684-25).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563220 was outside the method criteria for the following analyte: Carbon disulfide. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-562918 and 240-562940 and analytical batch 240-563220 are not currently reported because they are in queue for analysis.

Method 8260D: The MS/MSD for preparation batch 240-562940 and analytical batch 240-563220 are not currently reported because they are in queue for analysis.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563220 was outside the method criteria for the following analyte: Carbon disulfide. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 5035: The following sample(s) were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-SB1634-N. DITCH (240-180684-20).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563308 was outside the method criteria for the following analytes: Bromomethane, Carbon disulfide and Chloroethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-562918, 240-562940 and 240-563078 and analytical batch 240-563308 not reported because it was analyzed in another batch.

Method 8260D: Internal standard (ISTD) response for the following sample was outside control limits: WC-SB1865-N. DITCH (240-180684-17). The sample was re-extracted and/or re-analyzed and ISTD response was outside control limits.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Job ID: 240-180684-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-563434 and analytical batch 240-563458.

Method 8260D: Analytical batch QC for batch 563458 does not contain a method blank (MB). The method blank sample MB 240-563457/1-A was prepped on 2/26/2023 at 4:41pm, and was analyzed in place of an analytical batch method blank sample. Frozen prep batch QC is normally not applicable to this method, but since the method blank sample was prepped the same day as this analytical batch, it demonstrates cleanliness/compliance of the system.

Method 5035: Water preserved terracores have a 48 hour hold time from the time of sampling to the time of preservation. Samples WC-SB1865-N. DITCH (240-180684-17) and WC-SB1634-N. DITCH (240-180684-20) were received after normal business hours and the analyst that placed the aliquots in the freezer did not document the time. Samples were released to the laboratory on 2/21/2023 at 11:19 AM and 2/22/2023 at 11:38 AM. While we know the aliquots were frozen the night before, the release time is the only documented time available.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogate to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: WC-WS-NORTH-09 (3-4) (240-180684-10). These results have been reported and qualified.

Method 8270E: The following sample was diluted due to the nature of the sample matrix: WC-WS-NORTH-08 (3-4) (240-180684-9). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563266 recovered above the upper control limit for 2-Nitroaniline, 4-Nitrophenol, Bis(2-ethylhexyl) phthalate, Butyl benzyl phthalate, Caprolactam and Di-n-octyl phthalate. The samples associated with this CCV were either non-detect or recovered below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-WS-NORTH-01 (4-5) (240-180684-1), WC-WS-NORTH-03 (7-8) (240-180684-3), WC-WS-NORTH-04 (4-5) (240-180684-4), WC-WS-NORTH-05 (5-6) (240-180684-5), WC-WS-NORTH-08 (3-4) (240-180684-9) and WC-WS-NORTH-09 (3-4) (240-180684-10).

Method 8270E: The following sample was diluted due to the nature of the sample matrix: WC-WS-NORTH-02 (6-7) (240-180684-2). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563427 recovered outside acceptance criteria, low biased, for bis (2-chloroisopropyl) ether, 4-Nitrophenol, Benzaldehyde and Bis(2-chloroethyl)ether. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples: WC-WS-NORTH-02 (6-7) (240-180684-2) were non-detect for the analytes, the data has been reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563427 recovered above the upper control limit for 2-Nitrophenol. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated sample is impacted: WC-WS-NORTH-02 (6-7) (240-180684-2).

Method 8270E: The following sample was diluted due to the nature of the sample matrix: WC-SB1634-N. DITCH (240-180684-2). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563684 recovered above the upper control limit for Atrazine. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: WC-WS-NORTH-06 (5-6) (240-180684-7), WC-WS-NORTH-07 (3-4) (240-180684-8) and WC-WS-NORTH-10 (2-3) (240-180684-11).

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Job ID: 240-180684-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563684 recovered outside acceptance criteria, low biased, for bis (2-chloroisopropyl) ether, 4-Nitrophenol, Benzaldehyde, Bis(2-chloroethyl)ether and N-Nitrosodi-n-propylamine. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples: WC-WS-NORTH-06 (5-6) (240-180684-7), WC-WS-NORTH-07 (3-4) (240-180684-8) and WC-WS-NORTH-10 (2-3) (240-180684-11) were non-detect for the analytes, the data has been reported.

Method 8270E: Samples WC-WS-NORTH-06 (5-6) (240-180684-7), WC-WS-NORTH-07 (3-4) (240-180684-8) and WC-WS-NORTH-10 (2-3) (240-180684-11) had elevated reporting limits due to extract viscosity. The samples were initially prep using 30 grams. The resulting extracts were too viscous to pipette. The samples were re-extracted using 5 grams. The extracts were fluid enough that a 4x dilution was able to be injected for analysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-WS-NORTH-COMP (1-5) (240-180684-6), WC-WS-NORTH-COMP (6-10) (240-180684-12), (LCS 240-562981/2-(MB 240-562981/1-A), (240-180684-A-6-D MS), (240-180684-A-6-E MSD), WC-COMP1-N. DITCH (240-180684-18), WC-COMP1-N. DITCH (240-180684-24), WC-RT1538A-ST. SWEEPINGS (240-180684-25), (LCS 240-563290/2-A) and (MB 240-563290/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The following samples were diluted due to the nature of the sample matrix: WC-SB2650-N. DITCH (240-180684-13), WC-SB1865-N. DITCH (240-180684-17) and WC-SB2624-N. DITCH (240-180684-21). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

Method 537: The sample injection standard peak areas in the following samples: WC-COMP1-N. DITCH (240-180684-18) and WC-COMP2-N. DITCH (240-180684-24) are outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180684-1	WC-WS-NORTH-01 (4-5)	Solid	02/20/23 10:20	02/20/23 21:50
240-180684-2	WC-WS-NORTH-02 (6-7)	Solid	02/20/23 10:35	02/20/23 21:50
240-180684-3	WC-WS-NORTH-03 (7-8)	Solid	02/20/23 10:50	02/20/23 21:50
240-180684-4	WC-WS-NORTH-04 (4-5)	Solid	02/20/23 11:00	02/20/23 21:50
240-180684-5	WC-WS-NORTH-05 (5-6)	Solid	02/20/23 11:05	02/20/23 21:50
240-180684-6	WC-WS-NORTH-COMP (1-5)	Solid	02/20/23 00:00	02/20/23 21:50
240-180684-7	WC-WS-NORTH-06 (5-6)	Solid	02/20/23 11:20	02/20/23 21:50
240-180684-8	WC-WS-NORTH-07 (3-4)	Solid	02/20/23 11:46	02/20/23 21:50
240-180684-9	WC-WS-NORTH-08 (3-4)	Solid	02/20/23 11:55	02/20/23 21:50
240-180684-10	WC-WS-NORTH-09 (3-4)	Solid	02/20/23 12:05	02/20/23 21:50
240-180684-11	WC-WS-NORTH-10 (2-3)	Solid	02/20/23 12:20	02/20/23 21:50
240-180684-12	WC-WS-NORTH-COMP (6-10)	Solid	02/20/23 00:00	02/20/23 21:50
240-180684-13	WC-SB2650-N. DITCH	Solid	02/20/23 17:40	02/20/23 21:50
240-180684-14	WC-SB1692-N. DITCH	Solid	02/20/23 17:55	02/20/23 21:50
240-180684-15	WC-SB2598-N. DITCH	Solid	02/20/23 18:10	02/20/23 21:50
240-180684-16	WC-SB1852-N. DITCH	Solid	02/20/23 18:20	02/20/23 21:50
240-180684-17	WC-SB1865-N. DITCH	Solid	02/21/23 13:15	02/20/23 21:50
240-180684-18	WC-COMP1-N. DITCH	Solid	02/21/23 00:00	02/20/23 21:50
240-180684-19	WC-SB2621-N. DITCH	Solid	02/21/23 13:35	02/20/23 21:50
240-180684-20	WC-SB1634-N. DITCH	Solid	02/21/23 13:50	02/20/23 21:50
240-180684-21	WC-SB2624-N. DITCH	Solid	02/21/23 14:10	02/20/23 21:50
240-180684-22	WC-SB2474-N. DITCH	Solid	02/21/23 14:20	02/20/23 21:50
240-180684-23	WC-SB2405-N. DITCH	Solid	02/21/23 14:30	02/20/23 21:50
240-180684-24	WC-COMP2-N. DITCH	Solid	02/21/23 00:00	02/20/23 21:50
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Solid	02/21/23 14:45	02/20/23 21:50



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	0.092	J	0.25	0.048	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.38	J	1.0	0.25	mg/Kg	1	✳	8260D	Total/NA
Benzene	3.4		0.25	0.043	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.25	J	1.3	0.17	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.35	J	0.51	0.067	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	9.2		1.3	0.62	mg/Kg	5	✳	8260D	Total/NA
Xylenes, Total	0.12	J	0.51	0.092	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.48		0.18	0.024	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.059	J	0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.21		0.18	0.042	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.13	J	0.18	0.11	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.22		0.18	0.080	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.087	J	0.18	0.085	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.21		0.18	0.018	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.23		0.18	0.054	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.059	J	0.18	0.034	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.50		0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.36		0.18	0.027	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.33		0.18	0.026	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.3	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0030	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.015	J	0.050	0.0028	mg/L	1		6010D	TCLP
Mercury	0.00084	J	0.0020	0.00013	mg/L	1		7470A	TCLP

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.70	J	1.2	0.29	mg/Kg	1	✳	8260D	Total/NA
Benzene	1.8		0.30	0.050	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.29	J	1.5	0.20	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.12	J	0.59	0.078	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	1.7		0.30	0.15	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.089	J	0.13	0.045	mg/Kg	2	✳	8270E	Total/NA
2-Methylnaphthalene	0.45		0.039	0.0052	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.082		0.039	0.0075	mg/Kg	2	✳	8270E	Total/NA
Acenaphthylene	0.053		0.039	0.011	mg/Kg	2	✳	8270E	Total/NA
Acetophenone	0.13	J	0.26	0.029	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.16		0.039	0.0063	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.39		0.039	0.0090	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.33		0.039	0.025	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.49		0.039	0.017	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.23		0.039	0.019	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.13		0.039	0.018	mg/Kg	2	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.17	J	0.18	0.13	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.68		0.039	0.0039	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.072		0.039	0.018	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.11	J	0.13	0.034	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	0.74		0.039	0.012	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.22		0.039	0.0072	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.18		0.039	0.019	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-02 (6-7) (Continued)

Lab Sample ID: 240-180684-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.44		0.039	0.0063	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	0.92		0.039	0.0059	mg/Kg	2	✳	8270E	Total/NA
Pyrene	0.66		0.039	0.0056	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.0084	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.55	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0044	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.60	J	1.0	0.25	mg/Kg	1	✳	8260D	Total/NA
Benzene	2.2		0.26	0.044	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.19	J	0.52	0.069	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	1.4		0.26	0.13	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.18	J	0.52	0.095	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.14		0.060	0.020	mg/Kg	1	✳	8270E	Total/NA
2-Methylnaphthalene	0.76		0.018	0.0024	mg/Kg	1	✳	8270E	Total/NA
Acenaphthene	0.055		0.018	0.0034	mg/Kg	1	✳	8270E	Total/NA
Acenaphthylene	0.055		0.018	0.0048	mg/Kg	1	✳	8270E	Total/NA
Acetophenone	0.17		0.12	0.013	mg/Kg	1	✳	8270E	Total/NA
Anthracene	0.099		0.018	0.0029	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	0.26		0.018	0.0041	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	0.22		0.018	0.011	mg/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.36		0.018	0.0078	mg/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.14		0.018	0.0085	mg/Kg	1	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.11		0.018	0.0083	mg/Kg	1	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.073	J	0.084	0.061	mg/Kg	1	✳	8270E	Total/NA
Carbazole	0.036	J	0.060	0.023	mg/Kg	1	✳	8270E	Total/NA
Chrysene	0.44		0.018	0.0018	mg/Kg	1	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.049		0.018	0.0083	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.20		0.060	0.016	mg/Kg	1	✳	8270E	Total/NA
Di-n-butyl phthalate	0.084		0.084	0.061	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.36		0.018	0.0054	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.087		0.018	0.0033	mg/Kg	1	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.11		0.018	0.0088	mg/Kg	1	✳	8270E	Total/NA
Naphthalene	0.63		0.018	0.0029	mg/Kg	1	✳	8270E	Total/NA
Phenanthrene	0.65		0.018	0.0027	mg/Kg	1	✳	8270E	Total/NA
Pyrene	0.39		0.018	0.0026	mg/Kg	1	✳	8270E	Total/NA
Arsenic	0.0073	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.88	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0098	J	0.050	0.0028	mg/L	1		6010D	TCLP
Mercury	0.0017	J	0.0020	0.00013	mg/L	1		7470A	TCLP

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.38	J	0.69	0.17	mg/Kg	1	✳	8260D	Total/NA
Benzene	2.7		0.17	0.029	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.12	J	0.86	0.12	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.088	J	0.34	0.045	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-04 (4-5) (Continued)

Lab Sample ID: 240-180684-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.4		0.17	0.084	mg/Kg	1	☒	8260D	Total/NA
Xylenes, Total	0.11	J	0.34	0.062	mg/Kg	1	☒	8260D	Total/NA
1,1'-Biphenyl	0.083	J	0.20	0.069	mg/Kg	4	☒	8270E	Total/NA
2-Methylnaphthalene	0.32		0.060	0.0079	mg/Kg	4	☒	8270E	Total/NA
Acenaphthene	0.046	J	0.060	0.012	mg/Kg	4	☒	8270E	Total/NA
Acenaphthylene	0.039	J	0.060	0.016	mg/Kg	4	☒	8270E	Total/NA
Anthracene	0.071		0.060	0.0097	mg/Kg	4	☒	8270E	Total/NA
Benzo[a]anthracene	0.22		0.060	0.014	mg/Kg	4	☒	8270E	Total/NA
Benzo[a]pyrene	0.18		0.060	0.038	mg/Kg	4	☒	8270E	Total/NA
Benzo[b]fluoranthene	0.32		0.060	0.026	mg/Kg	4	☒	8270E	Total/NA
Benzo[g,h,i]perylene	0.12		0.060	0.029	mg/Kg	4	☒	8270E	Total/NA
Benzo[k]fluoranthene	0.094		0.060	0.028	mg/Kg	4	☒	8270E	Total/NA
Chrysene	0.29		0.060	0.0060	mg/Kg	4	☒	8270E	Total/NA
Dibenzofuran	0.11	J	0.20	0.052	mg/Kg	4	☒	8270E	Total/NA
Fluoranthene	0.36		0.060	0.018	mg/Kg	4	☒	8270E	Total/NA
Fluorene	0.073		0.060	0.011	mg/Kg	4	☒	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.094		0.060	0.030	mg/Kg	4	☒	8270E	Total/NA
Naphthalene	0.37		0.060	0.0097	mg/Kg	4	☒	8270E	Total/NA
Phenanthrene	0.45		0.060	0.0090	mg/Kg	4	☒	8270E	Total/NA
Pyrene	0.42		0.060	0.0086	mg/Kg	4	☒	8270E	Total/NA
Arsenic	0.0074	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.0	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0027	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0070	J	0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.0065	J	0.050	0.0060	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	55		14	2.4	mg/Kg	40	☒	8260D	Total/NA
Vinyl chloride	85		14	6.9	mg/Kg	40	☒	8260D	Total/NA
2-Methylnaphthalene	0.46		0.41	0.054	mg/Kg	20	☒	8270E	Total/NA
Anthracene	0.12	J	0.41	0.066	mg/Kg	20	☒	8270E	Total/NA
Benzo[a]anthracene	0.30	J	0.41	0.093	mg/Kg	20	☒	8270E	Total/NA
Benzo[b]fluoranthene	0.39	J	0.41	0.18	mg/Kg	20	☒	8270E	Total/NA
Chrysene	0.45		0.41	0.041	mg/Kg	20	☒	8270E	Total/NA
Fluoranthene	0.40	J	0.41	0.12	mg/Kg	20	☒	8270E	Total/NA
Fluorene	0.12	J	0.41	0.075	mg/Kg	20	☒	8270E	Total/NA
Naphthalene	0.63		0.41	0.066	mg/Kg	20	☒	8270E	Total/NA
Phenanthrene	0.50		0.41	0.061	mg/Kg	20	☒	8270E	Total/NA
Pyrene	0.65		0.41	0.059	mg/Kg	20	☒	8270E	Total/NA
Arsenic	0.0047	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.69	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0033	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.013	J	0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.0066	J	0.050	0.0060	mg/L	1		6010D	TCLP
Silver	0.00074	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.078		0.025	0.00042	mg/L	1		8260D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (1-5) (Continued)

Lab Sample ID: 240-180684-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.11		0.025	0.00045	mg/L	1		8260D	TCLP
Perfluorooctanesulfonic acid	0.71	J	0.73	0.24	ng/g	1	⊛	537 IDA	Total/NA

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.78	J	1.3	0.32	mg/Kg	1	⊛	8260D	Total/NA
Benzene	2.1		0.33	0.056	mg/Kg	1	⊛	8260D	Total/NA
Chloromethane	0.11	J	0.33	0.087	mg/Kg	1	⊛	8260D	Total/NA
Isopropylbenzene	0.061	J	0.33	0.050	mg/Kg	1	⊛	8260D	Total/NA
Methylcyclohexane	0.20	J	0.66	0.087	mg/Kg	1	⊛	8260D	Total/NA
Vinyl chloride	5.6		0.33	0.16	mg/Kg	1	⊛	8260D	Total/NA
Acetophenone	1.8	J	3.0	0.33	mg/Kg	4	⊛	8270E	Total/NA
Naphthalene	0.33	J	0.45	0.072	mg/Kg	4	⊛	8270E	Total/NA
Phenanthrene	0.13	J	0.45	0.067	mg/Kg	4	⊛	8270E	Total/NA
Arsenic	0.0075	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.29	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Selenium	0.0075	J	0.050	0.0060	mg/L	1		6010D	TCLP
Silver	0.00063	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.2	J	1.4	0.33	mg/Kg	1	⊛	8260D	Total/NA
Benzene	12		0.34	0.058	mg/Kg	1	⊛	8260D	Total/NA
Chloromethane	0.23	J	0.34	0.090	mg/Kg	1	⊛	8260D	Total/NA
Ethylbenzene	0.073	J	0.34	0.064	mg/Kg	1	⊛	8260D	Total/NA
Methyl acetate	0.53	J	1.7	0.23	mg/Kg	1	⊛	8260D	Total/NA
Toluene	0.46		0.34	0.33	mg/Kg	1	⊛	8260D	Total/NA
Vinyl chloride	10		0.34	0.17	mg/Kg	1	⊛	8260D	Total/NA
2-Methylnaphthalene	0.45		0.45	0.059	mg/Kg	4	⊛	8270E	Total/NA
Acetophenone	2.0	J	3.0	0.33	mg/Kg	4	⊛	8270E	Total/NA
Chrysene	0.11	J	0.45	0.045	mg/Kg	4	⊛	8270E	Total/NA
Fluorene	0.14	J	0.45	0.082	mg/Kg	4	⊛	8270E	Total/NA
Naphthalene	1.1		0.45	0.072	mg/Kg	4	⊛	8270E	Total/NA
Phenanthrene	0.28	J	0.45	0.067	mg/Kg	4	⊛	8270E	Total/NA
Phenol	1.9		1.5	0.24	mg/Kg	4	⊛	8270E	Total/NA
Arsenic	0.0071	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.52	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0039	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.024	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	19		0.62	0.10	mg/Kg	1.6666	⊛	8260D	Total/NA
Chloromethane	0.12	J	0.37	0.098	mg/Kg	1	⊛	8260D	Total/NA
Ethylbenzene	0.18	J	0.37	0.070	mg/Kg	1	⊛	8260D	Total/NA
Isopropylbenzene	0.061	J	0.37	0.056	mg/Kg	1	⊛	8260D	Total/NA
Methyl acetate	0.42	J	1.9	0.25	mg/Kg	1	⊛	8260D	Total/NA
Methylcyclohexane	0.24	J	0.74	0.098	mg/Kg	1	⊛	8260D	Total/NA
Toluene	0.88		0.37	0.36	mg/Kg	1	⊛	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-08 (3-4) (Continued)

Lab Sample ID: 240-180684-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.44		0.37	0.18	mg/Kg	1	☒	8260D	Total/NA
Xylenes, Total	0.45	J	0.74	0.14	mg/Kg	1	☒	8260D	Total/NA
1,1'-Biphenyl	0.24	J	0.27	0.091	mg/Kg	4	☒	8270E	Total/NA
2-Methylnaphthalene	0.97		0.081	0.011	mg/Kg	4	☒	8270E	Total/NA
Acenaphthene	0.090		0.081	0.015	mg/Kg	4	☒	8270E	Total/NA
Acenaphthylene	0.036	J	0.081	0.022	mg/Kg	4	☒	8270E	Total/NA
Acetophenone	0.93		0.54	0.059	mg/Kg	4	☒	8270E	Total/NA
Anthracene	0.082		0.081	0.013	mg/Kg	4	☒	8270E	Total/NA
Benzo[a]anthracene	0.19		0.081	0.018	mg/Kg	4	☒	8270E	Total/NA
Benzo[a]pyrene	0.18		0.081	0.050	mg/Kg	4	☒	8270E	Total/NA
Benzo[b]fluoranthene	0.21		0.081	0.035	mg/Kg	4	☒	8270E	Total/NA
Benzo[g,h,i]perylene	0.081		0.081	0.038	mg/Kg	4	☒	8270E	Total/NA
Benzo[k]fluoranthene	0.062	J	0.081	0.037	mg/Kg	4	☒	8270E	Total/NA
Chrysene	0.32		0.081	0.0080	mg/Kg	4	☒	8270E	Total/NA
Dibenzofuran	0.16	J	0.27	0.070	mg/Kg	4	☒	8270E	Total/NA
Fluoranthene	0.21		0.081	0.024	mg/Kg	4	☒	8270E	Total/NA
Fluorene	0.25		0.081	0.015	mg/Kg	4	☒	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.050	J	0.081	0.040	mg/Kg	4	☒	8270E	Total/NA
Naphthalene	1.5		0.081	0.013	mg/Kg	4	☒	8270E	Total/NA
Phenanthrene	0.68		0.081	0.012	mg/Kg	4	☒	8270E	Total/NA
Phenol	0.14	J	0.27	0.043	mg/Kg	4	☒	8270E	Total/NA
Pyrene	0.26		0.081	0.012	mg/Kg	4	☒	8270E	Total/NA
Arsenic	0.0099	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	2.7	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0033	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.011	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00088	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	1.0		0.29	0.055	mg/Kg	1	☒	8260D	Total/NA
Acetone	1.0	J	1.2	0.28	mg/Kg	1	☒	8260D	Total/NA
Benzene	11		0.29	0.049	mg/Kg	1	☒	8260D	Total/NA
Chlorobenzene	0.089	J	0.29	0.041	mg/Kg	1	☒	8260D	Total/NA
Chloromethane	0.29		0.29	0.077	mg/Kg	1	☒	8260D	Total/NA
Ethylbenzene	0.24	J	0.29	0.055	mg/Kg	1	☒	8260D	Total/NA
Methyl acetate	0.33	J	1.5	0.20	mg/Kg	1	☒	8260D	Total/NA
Toluene	1.5		0.29	0.28	mg/Kg	1	☒	8260D	Total/NA
Vinyl chloride	0.18	J	0.29	0.14	mg/Kg	1	☒	8260D	Total/NA
Xylenes, Total	0.41	J	0.58	0.11	mg/Kg	1	☒	8260D	Total/NA
1,1'-Biphenyl	0.18		0.062	0.021	mg/Kg	1	☒	8270E	Total/NA
2-Methylnaphthalene	0.52		0.019	0.0024	mg/Kg	1	☒	8270E	Total/NA
Acenaphthene	0.068		0.019	0.0036	mg/Kg	1	☒	8270E	Total/NA
Acenaphthylene	0.022		0.019	0.0050	mg/Kg	1	☒	8270E	Total/NA
Acetophenone	0.69		0.12	0.014	mg/Kg	1	☒	8270E	Total/NA
Anthracene	0.065		0.019	0.0030	mg/Kg	1	☒	8270E	Total/NA
Benzo[a]anthracene	0.10		0.019	0.0042	mg/Kg	1	☒	8270E	Total/NA
Benzo[a]pyrene	0.055		0.019	0.012	mg/Kg	1	☒	8270E	Total/NA
Benzo[b]fluoranthene	0.11		0.019	0.0081	mg/Kg	1	☒	8270E	Total/NA
Benzo[k]fluoranthene	0.027		0.019	0.0086	mg/Kg	1	☒	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4) (Continued)

Lab Sample ID: 240-180684-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	0.16		0.019	0.0019	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.059	J	0.062	0.016	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.13		0.019	0.0055	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.23		0.019	0.0034	mg/Kg	1	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.015	J	0.019	0.0091	mg/Kg	1	✳	8270E	Total/NA
Naphthalene	1.1		0.019	0.0030	mg/Kg	1	✳	8270E	Total/NA
Phenanthrene	0.42		0.019	0.0028	mg/Kg	1	✳	8270E	Total/NA
Phenol	0.057	J	0.062	0.0099	mg/Kg	1	✳	8270E	Total/NA
Pyrene	0.14		0.019	0.0027	mg/Kg	1	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	2.6	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0017	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0094	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0011	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.42	J	1.3	0.31	mg/Kg	1	✳	8260D	Total/NA
Benzene	53		3.2	0.54	mg/Kg	10	✳	8260D	Total/NA
Chlorobenzene	0.096	J	0.32	0.045	mg/Kg	1	✳	8260D	Total/NA
Chloromethane	0.38		0.32	0.084	mg/Kg	1	✳	8260D	Total/NA
Ethylbenzene	0.32		0.32	0.060	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.056	J	0.32	0.049	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.49	J	1.6	0.21	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.096	J	0.64	0.084	mg/Kg	1	✳	8260D	Total/NA
Toluene	2.0		0.32	0.31	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.47	J	0.64	0.12	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.61		0.46	0.060	mg/Kg	4	✳	8270E	Total/NA
Acetophenone	1.8	J	3.1	0.34	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.22	J	0.46	0.046	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.16	J	0.46	0.14	mg/Kg	4	✳	8270E	Total/NA
Fluorene	0.24	J	0.46	0.084	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	1.6		0.46	0.074	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.49		0.46	0.068	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.16	J	0.46	0.066	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.014	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	2.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00093	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0077	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.35		0.025	0.00042	mg/L	1		8260D	TCLP
Vinyl chloride	0.087		0.025	0.00045	mg/L	1		8260D	TCLP
Perfluorooctanesulfonic acid	0.25	J	0.70	0.23	ng/g	1	✳	537 IDA	Total/NA

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.66	J	1.8	0.44	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2650-N. DITCH (Continued)

Lab Sample ID: 240-180684-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.31	J	0.90	0.12	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.2	F1 F2	0.45	0.059	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.44	J	0.45	0.073	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	1.8		0.45	0.10	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	1.4		0.45	0.28	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	2.2	F1	0.45	0.20	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.61		0.45	0.21	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.83		0.45	0.21	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.4	F1	0.45	0.045	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.53	J F1	1.5	0.39	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	4.4		0.45	0.13	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.12	J	0.45	0.083	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.55		0.45	0.22	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.75	F1 F2	0.45	0.073	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	3.4	F1	0.45	0.067	mg/Kg	20	✳	8270E	Total/NA
Pyrene	4.1		0.45	0.065	mg/Kg	20	✳	8270E	Total/NA
Barium	0.62	J B	2.5	0.0066	mg/L	5		6010D	TCLP
Cadmium	0.0047	J	0.25	0.0010	mg/L	5		6010D	TCLP

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.58	J	2.0	0.50	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.38	J	2.5	0.34	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.25	J	1.0	0.13	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.24	J	1.0	0.19	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	5.3		0.48	0.062	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.18	J	0.48	0.091	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.30	J	0.48	0.077	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	1.7		0.48	0.11	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	1.6		0.48	0.30	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	2.8		0.48	0.21	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.59		0.48	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.86		0.48	0.22	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.0		0.48	0.047	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.5	J	1.6	0.41	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.8		0.48	0.14	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.17	J	0.48	0.087	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.53		0.48	0.23	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	3.5		0.48	0.077	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	2.9		0.48	0.071	mg/Kg	20	✳	8270E	Total/NA
Pyrene	2.7		0.48	0.068	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.011	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.51	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0040	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0058	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.033	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0014	J	0.050	0.00062	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.71	J	1.9	0.48	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.45	J	0.97	0.13	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.24	J	0.97	0.18	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.72		0.38	0.13	mg/Kg	5	✳	8270E	Total/NA
2-Methylnaphthalene	6.2		0.12	0.015	mg/Kg	5	✳	8270E	Total/NA
Acenaphthene	0.32		0.12	0.022	mg/Kg	5	✳	8270E	Total/NA
Acenaphthylene	0.17		0.12	0.031	mg/Kg	5	✳	8270E	Total/NA
Anthracene	0.41		0.12	0.018	mg/Kg	5	✳	8270E	Total/NA
Benzaldehyde	0.21	J	0.77	0.18	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]anthracene	1.8		0.12	0.026	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]pyrene	1.9		0.12	0.072	mg/Kg	5	✳	8270E	Total/NA
Benzo[b]fluoranthene	2.9		0.12	0.050	mg/Kg	5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.46		0.12	0.055	mg/Kg	5	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.2		0.12	0.053	mg/Kg	5	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	3.1		0.54	0.39	mg/Kg	5	✳	8270E	Total/NA
Carbazole	0.45		0.38	0.15	mg/Kg	5	✳	8270E	Total/NA
Chrysene	2.2		0.12	0.011	mg/Kg	5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.12		0.12	0.053	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	2.4		0.38	0.10	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	3.3		0.12	0.034	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.31		0.12	0.021	mg/Kg	5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.38		0.12	0.056	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	4.1		0.12	0.018	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	5.6		0.12	0.017	mg/Kg	5	✳	8270E	Total/NA
Pyrene	3.1		0.12	0.016	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.015	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.37	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0032	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.24		0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.74	J	1.8	0.43	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.20	J	0.89	0.12	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.23	J	0.44	0.22	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	3.8		0.42	0.055	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.48		0.42	0.081	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.38	J	0.42	0.11	mg/Kg	20	✳	8270E	Total/NA
Anthracene	1.3		0.42	0.068	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	3.3		0.42	0.096	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	2.8		0.42	0.26	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	4.2		0.42	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.85		0.42	0.20	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.6		0.42	0.20	mg/Kg	20	✳	8270E	Total/NA
Carbazole	0.76	J	1.4	0.54	mg/Kg	20	✳	8270E	Total/NA
Chrysene	3.9		0.42	0.042	mg/Kg	20	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.26	J	0.42	0.20	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.7		1.4	0.37	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	7.7		0.42	0.13	mg/Kg	20	✳	8270E	Total/NA
Fluorene	1.0		0.42	0.077	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1852-N. DITCH (Continued)

Lab Sample ID: 240-180684-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	0.87		0.42	0.21	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	2.5		0.42	0.068	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	9.8		0.42	0.063	mg/Kg	20	✳	8270E	Total/NA
Pyrene	7.1		0.42	0.060	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0068	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.70	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0037	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0051	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.025	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0013	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	58	J	170	41	mg/Kg	66.6666	✳	8260D	Total/NA
Vinyl chloride	0.063		0.0091	0.0032	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	2.0		0.53	0.070	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.27	J	0.53	0.10	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.19	J	0.53	0.14	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.64		0.53	0.086	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	2.1		0.53	0.12	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	2.2		0.53	0.33	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	3.7		0.53	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.54		0.53	0.25	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.1		0.53	0.25	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.7		0.53	0.053	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.85	J	1.8	0.46	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	4.5		0.53	0.16	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.37	J	0.53	0.097	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.62		0.53	0.26	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.5		0.53	0.086	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	4.0		0.53	0.079	mg/Kg	20	✳	8270E	Total/NA
Pyrene	4.0		0.53	0.076	mg/Kg	20	✳	8270E	Total/NA
Barium	0.45	J B	1.0	0.0027	mg/L	2		6010D	TCLP
Cadmium	0.0064	J	0.10	0.00041	mg/L	2		6010D	TCLP
Lead	0.041	J	0.10	0.0055	mg/L	2		6010D	TCLP
Silver	0.0014	J	0.10	0.0012	mg/L	2		6010D	TCLP

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid	0.87	J	0.92	0.31	ng/g	1	✳	537 IDA	Total/NA
Perfluorooctanesulfonic acid - RA	1.0		0.92	0.31	ng/g	1	✳	537 IDA	Total/NA

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.4	J	3.2	0.79	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	1.3	J	4.0	0.54	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	3.2		0.81	0.40	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	5.9		0.80	0.10	mg/Kg	25	✳	8270E	Total/NA
Acenaphthene	0.89		0.80	0.15	mg/Kg	25	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH (Continued)

Lab Sample ID: 240-180684-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthylene	0.65	J	0.80	0.21	mg/Kg	25	✳	8270E	Total/NA
Anthracene	0.95		0.80	0.13	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]anthracene	3.2		0.80	0.18	mg/Kg	25	✳	8270E	Total/NA
Benzo[a]pyrene	3.1		0.80	0.50	mg/Kg	25	✳	8270E	Total/NA
Benzo[b]fluoranthene	4.2		0.80	0.35	mg/Kg	25	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.6		0.80	0.38	mg/Kg	25	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.7		0.80	0.37	mg/Kg	25	✳	8270E	Total/NA
Chrysene	3.8		0.80	0.079	mg/Kg	25	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.40	J	0.80	0.37	mg/Kg	25	✳	8270E	Total/NA
Dibenzofuran	2.5	J	2.7	0.69	mg/Kg	25	✳	8270E	Total/NA
Fluoranthene	7.6		0.80	0.24	mg/Kg	25	✳	8270E	Total/NA
Fluorene	1.1		0.80	0.15	mg/Kg	25	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.4		0.80	0.39	mg/Kg	25	✳	8270E	Total/NA
Naphthalene	4.8		0.80	0.13	mg/Kg	25	✳	8270E	Total/NA
Phenanthrene	9.0		0.80	0.12	mg/Kg	25	✳	8270E	Total/NA
Pyrene	7.7		0.80	0.11	mg/Kg	25	✳	8270E	Total/NA
Barium	0.44	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.016	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0054	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.12		0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.6	J	3.8	0.92	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.14		0.010	0.0037	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	2.5		0.73	0.096	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.47	J	0.73	0.14	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.30	J	0.73	0.20	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.68	J	0.73	0.12	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	4.7		0.73	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	4.8		0.73	0.46	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	6.9		0.73	0.32	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.8		0.73	0.35	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	2.7		0.73	0.34	mg/Kg	20	✳	8270E	Total/NA
Chrysene	4.6		0.73	0.073	mg/Kg	20	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.45	J	0.73	0.34	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	1.0	J	2.4	0.63	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	7.5		0.73	0.22	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.50	J	0.73	0.13	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.8		0.73	0.36	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	1.9		0.73	0.12	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	3.6		0.73	0.11	mg/Kg	20	✳	8270E	Total/NA
Pyrene	7.3		0.73	0.10	mg/Kg	20	✳	8270E	Total/NA
Barium	0.28	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0032	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.93	J	2.2	0.53	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH (Continued)

Lab Sample ID: 240-180684-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.19	J	1.1	0.14	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	1.6		1.3	0.16	mg/Kg	50	☼	8270E	Total/NA
Benzo[a]anthracene	0.90	J	1.3	0.28	mg/Kg	50	☼	8270E	Total/NA
Benzo[b]fluoranthene	1.4		1.3	0.54	mg/Kg	50	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.76	J	1.3	0.59	mg/Kg	50	☼	8270E	Total/NA
Chrysene	0.97	J	1.3	0.12	mg/Kg	50	☼	8270E	Total/NA
Fluoranthene	1.5		1.3	0.37	mg/Kg	50	☼	8270E	Total/NA
Naphthalene	1.1	J	1.3	0.20	mg/Kg	50	☼	8270E	Total/NA
Phenanthrene	1.2	J	1.3	0.19	mg/Kg	50	☼	8270E	Total/NA
Pyrene	1.4		1.3	0.18	mg/Kg	50	☼	8270E	Total/NA
Arsenic	0.010	J	0.10	0.0081	mg/L	2		6010D	TCLP
Barium	0.49	J B	1.0	0.0027	mg/L	2		6010D	TCLP
Cadmium	0.0081	J	0.10	0.00041	mg/L	2		6010D	TCLP
Lead	0.22		0.10	0.0055	mg/L	2		6010D	TCLP
Silver	0.0016	J	0.10	0.0012	mg/L	2		6010D	TCLP

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.53	J	1.1	0.27	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.21		0.12	0.016	mg/Kg	6.667	☼	8270E	Total/NA
Acenaphthene	0.11	J	0.12	0.023	mg/Kg	6.667	☼	8270E	Total/NA
Anthracene	0.25		0.12	0.019	mg/Kg	6.667	☼	8270E	Total/NA
Benzo[a]anthracene	0.78		0.12	0.027	mg/Kg	6.667	☼	8270E	Total/NA
Benzo[a]pyrene	0.64		0.12	0.075	mg/Kg	6.667	☼	8270E	Total/NA
Benzo[b]fluoranthene	1.0		0.12	0.052	mg/Kg	6.667	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.16		0.12	0.057	mg/Kg	6.667	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.44		0.12	0.056	mg/Kg	6.667	☼	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.63		0.56	0.41	mg/Kg	6.667	☼	8270E	Total/NA
Carbazole	0.21	J	0.40	0.15	mg/Kg	6.667	☼	8270E	Total/NA
Chrysene	0.89		0.12	0.012	mg/Kg	6.667	☼	8270E	Total/NA
Dibenzofuran	0.14	J	0.40	0.10	mg/Kg	6.667	☼	8270E	Total/NA
Fluoranthene	2.0		0.12	0.036	mg/Kg	6.667	☼	8270E	Total/NA
Fluorene	0.15		0.12	0.022	mg/Kg	6.667	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.17		0.12	0.059	mg/Kg	6.667	☼	8270E	Total/NA
Naphthalene	0.17		0.12	0.019	mg/Kg	6.667	☼	8270E	Total/NA
Phenanthrene	1.3		0.12	0.018	mg/Kg	6.667	☼	8270E	Total/NA
Pyrene	1.6		0.12	0.017	mg/Kg	6.667	☼	8270E	Total/NA
Barium	0.89	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0019	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0041	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0083	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.0	J	1.9	0.45	mg/Kg	1	☼	8260D	Total/NA
Methyl acetate	0.62	J	2.3	0.31	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.88		0.23	0.030	mg/Kg	10	☼	8270E	Total/NA
Acenaphthene	0.052	J	0.23	0.044	mg/Kg	10	☼	8270E	Total/NA
Acenaphthylene	0.065	J	0.23	0.061	mg/Kg	10	☼	8270E	Total/NA
Anthracene	0.15	J	0.23	0.037	mg/Kg	10	☼	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2405-N. DITCH (Continued)

Lab Sample ID: 240-180684-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	0.63		0.23	0.052	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.87		0.23	0.14	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.7		0.23	0.099	mg/Kg	10	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.33		0.23	0.11	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.57		0.23	0.11	mg/Kg	10	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.86	J	1.1	0.78	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.84		0.23	0.023	mg/Kg	10	✳	8270E	Total/NA
Dibenzofuran	0.30	J	0.76	0.20	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	1.2		0.23	0.068	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.063	J	0.23	0.042	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.31		0.23	0.11	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.56		0.23	0.037	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.77		0.23	0.034	mg/Kg	10	✳	8270E	Total/NA
Pyrene	1.1		0.23	0.033	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.11		0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.35	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.035	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid	0.78		0.76	0.25	ng/g	1	✳	537 IDA	Total/NA

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	2.6		1.0	0.24	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.091	J	0.25	0.042	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.27	J	1.2	0.17	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.11	J	0.50	0.066	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.29	J	0.32	0.041	mg/Kg	20	✳	8270E	Total/NA
Acenaphthene	0.32		0.32	0.061	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.84		0.32	0.051	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	4.7		0.32	0.072	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	4.8		0.32	0.20	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	8.5		0.32	0.14	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	2.0		0.32	0.15	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	3.0		0.32	0.15	mg/Kg	20	✳	8270E	Total/NA
Butyl benzyl phthalate	1.2	J	1.5	0.47	mg/Kg	20	✳	8270E	Total/NA
Carbazole	1.6		1.1	0.40	mg/Kg	20	✳	8270E	Total/NA
Chrysene	7.2		0.32	0.032	mg/Kg	20	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.59		0.32	0.15	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	15		0.32	0.094	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.41		0.32	0.058	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	2.0		0.32	0.16	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.23	J	0.32	0.051	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	6.9		0.32	0.047	mg/Kg	20	✳	8270E	Total/NA
Pyrene	12		0.32	0.045	mg/Kg	20	✳	8270E	Total/NA
Barium	0.48	J	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0017	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0080	J	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS (Continued)

Lab Sample ID: 240-180684-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Silver	0.00083	J	0.050	0.00062	mg/L	1		6010D	TCLP

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.079	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.068	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,1,2-Trichloroethane	ND		0.25	0.058	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,1-Dichloroethane	ND		0.25	0.049	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,1-Dichloroethene	ND		0.25	0.083	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,2-Dibromo-3-Chloropropane	ND		0.51	0.22	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Ethylene Dibromide	ND		0.25	0.080	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,2-Dichloroethane	0.092	J	0.25	0.048	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,2-Dichloropropane	ND		0.25	0.038	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,3-Dichlorobenzene	ND		0.25	0.047	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
1,4-Dichlorobenzene	ND		0.25	0.056	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
2-Hexanone	ND		1.0	0.27	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Acetone	0.38	J	1.0	0.25	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Benzene	3.4		0.25	0.043	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Dichlorobromomethane	ND		0.25	0.062	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Bromoform	ND		0.25	0.23	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Bromomethane	ND		0.25	0.17	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Carbon disulfide	ND		0.25	0.11	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Chlorobenzene	ND		0.25	0.035	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Chloroethane	ND		0.25	0.15	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Chloroform	ND		0.25	0.055	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Chloromethane	ND		0.25	0.067	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
cis-1,2-Dichloroethene	ND		0.25	0.041	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
cis-1,3-Dichloropropene	ND		0.25	0.13	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Cyclohexane	ND		0.51	0.17	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Dichlorodifluoromethane	ND		0.25	0.054	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Ethylbenzene	ND		0.25	0.048	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Isopropylbenzene	ND		0.25	0.039	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Methyl acetate	0.25	J	1.3	0.17	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Methyl tert-butyl ether	ND		0.25	0.038	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Methylcyclohexane	0.35	J	0.51	0.067	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Methylene Chloride	ND		0.51	0.39	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Styrene	ND		0.25	0.053	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Tetrachloroethene	ND		0.25	0.098	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Toluene	ND		0.25	0.24	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
trans-1,2-Dichloroethene	ND		0.25	0.063	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Trichloroethene	ND		0.25	0.14	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1
Vinyl chloride	9.2		1.3	0.62	mg/Kg	✱	02/21/23 13:30	02/24/23 14:32	5
Xylenes, Total	0.12	J	0.51	0.092	mg/Kg	✱	02/21/23 13:30	02/23/23 18:28	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/21/23 13:30	02/23/23 18:28	1
Toluene-d8 (Surr)	107		56 - 125	02/21/23 13:30	02/24/23 14:32	5
Dibromofluoromethane (Surr)	97		41 - 138	02/21/23 13:30	02/23/23 18:28	1
Dibromofluoromethane (Surr)	105		41 - 138	02/21/23 13:30	02/24/23 14:32	5
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 13:30	02/23/23 18:28	1
4-Bromofluorobenzene (Surr)	108		41 - 143	02/21/23 13:30	02/24/23 14:32	5
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/21/23 13:30	02/23/23 18:28	1
1,2-Dichloroethane-d4 (Surr)	112		58 - 125	02/21/23 13:30	02/24/23 14:32	5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.61	0.21	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4,5-Trichlorophenol	ND		1.8	0.84	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4,6-Trichlorophenol	ND		1.8	0.78	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4-Dichlorophenol	ND		1.8	0.54	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4-Dimethylphenol	ND		1.8	0.49	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4-Dinitrophenol	ND		4.0	1.7	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,4-Dinitrotoluene	ND		2.4	0.76	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2,6-Dinitrotoluene	ND		2.4	0.69	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Chloronaphthalene	ND		0.61	0.17	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Chlorophenol	ND		0.61	0.12	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Methylnaphthalene	0.48		0.18	0.024	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Methylphenol	ND		2.4	0.38	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Nitroaniline	ND		2.4	0.49	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
2-Nitrophenol	ND		0.61	0.16	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
3,3'-Dichlorobenzidine	ND		1.2	0.53	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
3-Nitroaniline	ND		2.4	0.60	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4,6-Dinitro-2-methylphenol	ND		4.0	0.98	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Bromophenyl phenyl ether	ND		0.61	0.17	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Chloro-3-methylphenol	ND		1.8	0.55	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Chloroaniline	ND		1.8	0.37	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Chlorophenyl phenyl ether	ND		0.61	0.17	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Nitroaniline	ND		2.4	0.73	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
4-Nitrophenol	ND		4.0	1.2	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Acenaphthene	ND		0.18	0.035	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Acenaphthylene	ND		0.18	0.049	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Acetophenone	ND		1.2	0.13	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Anthracene	0.059 J		0.18	0.029	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Atrazine	ND		2.4	0.44	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzaldehyde	ND		1.2	0.28	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzo[a]anthracene	0.21		0.18	0.042	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzo[a]pyrene	0.13 J		0.18	0.11	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzo[b]fluoranthene	0.22		0.18	0.080	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzo[g,h,i]perylene	ND		0.18	0.087	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Benzo[k]fluoranthene	0.087 J		0.18	0.085	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Bis(2-chloroethoxy)methane	ND		1.2	0.15	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Bis(2-chloroethyl)ether	ND		1.2	0.15	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Bis(2-ethylhexyl) phthalate	ND		0.86	0.62	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Butyl benzyl phthalate	ND		0.86	0.27	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		4.0	0.92	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Carbazole	ND		0.61	0.23	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Chrysene	0.21		0.18	0.018	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Dibenz(a,h)anthracene	ND		0.18	0.085	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Dibenzofuran	ND		0.61	0.16	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Diethyl phthalate	ND		0.86	0.38	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Dimethyl phthalate	ND		0.86	0.17	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Di-n-butyl phthalate	ND		0.86	0.62	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Di-n-octyl phthalate	ND		0.86	0.34	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Fluoranthene	0.23		0.18	0.054	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Fluorene	0.059	J	0.18	0.034	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Hexachlorobenzene	ND		0.18	0.035	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Hexachlorobutadiene	ND		0.61	0.15	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Hexachlorocyclopentadiene	ND		4.0	0.76	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Hexachloroethane	ND		0.61	0.11	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Indeno[1,2,3-cd]pyrene	ND		0.18	0.090	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Isophorone	ND		0.61	0.15	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
N-Nitrosodi-n-propylamine	ND		0.61	0.13	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
N-Nitrosodiphenylamine	ND		0.61	0.15	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Naphthalene	0.50		0.18	0.029	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Nitrobenzene	ND		1.2	0.16	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Pentachlorophenol	ND		1.8	0.71	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Phenanthrene	0.36		0.18	0.027	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Phenol	ND		0.61	0.098	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
Pyrene	0.33		0.18	0.026	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10
3 & 4 Methylphenol	ND		4.9	0.35	mg/Kg	☼	02/22/23 09:34	02/24/23 15:47	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	108		46 - 137	02/22/23 09:34	02/24/23 15:47	10
Phenol-d5 (Surr)	86		26 - 120	02/22/23 09:34	02/24/23 15:47	10
Nitrobenzene-d5 (Surr)	85		25 - 120	02/22/23 09:34	02/24/23 15:47	10
2-Fluorophenol (Surr)	79		20 - 120	02/22/23 09:34	02/24/23 15:47	10
2-Fluorobiphenyl (Surr)	85		34 - 120	02/22/23 09:34	02/24/23 15:47	10
2,4,6-Tribromophenol (Surr)	55		10 - 120	02/22/23 09:34	02/24/23 15:47	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:19	1
Barium	1.3	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:19	1
Cadmium	0.0030	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:19	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:19	1
Lead	0.015	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:19	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:19	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:19	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00084	J	0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.9		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	19.1		0.1	0.1	%			02/21/23 14:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Date Collected: 02/20/23 10:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 76.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.30	0.092	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,1,2,2-Tetrachloroethane	ND		0.30	0.18	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.30	0.079	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,1,2-Trichloroethane	ND		0.30	0.067	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,1-Dichloroethane	ND		0.30	0.057	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,1-Dichloroethene	ND		0.30	0.097	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,2,4-Trichlorobenzene	ND		0.30	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,2-Dibromo-3-Chloropropane	ND		0.59	0.26	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Ethylene Dibromide	ND		0.30	0.094	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,2-Dichlorobenzene	ND		0.30	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,2-Dichloroethane	ND		0.30	0.056	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,2-Dichloropropane	ND		0.30	0.044	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,3-Dichlorobenzene	ND		0.30	0.054	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
1,4-Dichlorobenzene	ND		0.30	0.065	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
2-Butanone (MEK)	ND		1.2	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
2-Hexanone	ND		1.2	0.31	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Acetone	0.70	J	1.2	0.29	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Benzene	1.8		0.30	0.050	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Dichlorobromomethane	ND		0.30	0.072	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Bromoform	ND		0.30	0.27	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Bromomethane	ND		0.30	0.20	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Carbon disulfide	ND		0.30	0.13	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Carbon tetrachloride	ND		0.30	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Chlorobenzene	ND		0.30	0.041	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Chloroethane	ND		0.30	0.18	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Chloroform	ND		0.30	0.064	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Chloromethane	ND		0.30	0.078	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
cis-1,2-Dichloroethene	ND		0.30	0.047	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
cis-1,3-Dichloropropene	ND		0.30	0.15	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Cyclohexane	ND		0.59	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Chlorodibromomethane	ND		0.30	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Dichlorodifluoromethane	ND		0.30	0.063	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Ethylbenzene	ND		0.30	0.056	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Isopropylbenzene	ND		0.30	0.045	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Methyl acetate	0.29	J	1.5	0.20	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Methyl tert-butyl ether	ND		0.30	0.044	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Methylcyclohexane	0.12	J	0.59	0.078	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Methylene Chloride	ND		0.59	0.45	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Styrene	ND		0.30	0.062	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Tetrachloroethene	ND		0.30	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Toluene	ND		0.30	0.28	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
trans-1,2-Dichloroethene	ND		0.30	0.073	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
trans-1,3-Dichloropropene	ND		0.30	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Trichloroethene	ND		0.30	0.17	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Trichlorofluoromethane	ND		0.30	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Vinyl chloride	1.7		0.30	0.15	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1
Xylenes, Total	ND		0.59	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 19:43	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Date Collected: 02/20/23 10:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 76.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/23/23 19:43	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/23/23 19:43	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/23/23 19:43	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125	02/21/23 19:38	02/23/23 19:43	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.089	J	0.13	0.045	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
bis (2-chloroisopropyl) ether	ND		0.26	0.026	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4,5-Trichlorophenol	ND		0.39	0.18	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4,6-Trichlorophenol	ND		0.39	0.17	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4-Dichlorophenol	ND		0.39	0.12	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4-Dimethylphenol	ND		0.39	0.11	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4-Dinitrophenol	ND		0.87	0.37	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,4-Dinitrotoluene	ND		0.53	0.16	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2,6-Dinitrotoluene	ND		0.53	0.15	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Chloronaphthalene	ND		0.13	0.037	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Chlorophenol	ND		0.13	0.026	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Methylnaphthalene	0.45		0.039	0.0052	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Methylphenol	ND		0.53	0.081	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Nitroaniline	ND		0.53	0.11	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
2-Nitrophenol	ND		0.13	0.034	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
3,3'-Dichlorobenzidine	ND		0.26	0.11	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
3-Nitroaniline	ND		0.53	0.13	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4,6-Dinitro-2-methylphenol	ND		0.87	0.21	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Bromophenyl phenyl ether	ND		0.13	0.037	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Chloro-3-methylphenol	ND		0.39	0.12	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Chloroaniline	ND		0.39	0.079	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Chlorophenyl phenyl ether	ND		0.13	0.037	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Nitroaniline	ND		0.53	0.16	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
4-Nitrophenol	ND		0.87	0.25	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Acenaphthene	0.082		0.039	0.0075	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Acenaphthylene	0.053		0.039	0.011	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Acetophenone	0.13	J	0.26	0.029	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Anthracene	0.16		0.039	0.0063	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Atrazine	ND		0.53	0.095	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzaldehyde	ND		0.26	0.060	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzo[a]anthracene	0.39		0.039	0.0090	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzo[a]pyrene	0.33		0.039	0.025	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzo[b]fluoranthene	0.49		0.039	0.017	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzo[g,h,i]perylene	0.23		0.039	0.019	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Benzo[k]fluoranthene	0.13		0.039	0.018	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Bis(2-chloroethoxy)methane	ND		0.26	0.032	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Bis(2-chloroethyl)ether	ND		0.26	0.032	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Bis(2-ethylhexyl) phthalate	0.17	J	0.18	0.13	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Butyl benzyl phthalate	ND		0.18	0.058	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Caprolactam	ND		0.87	0.20	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Carbazole	ND		0.13	0.050	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Chrysene	0.68		0.039	0.0039	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2
Dibenz(a,h)anthracene	0.072		0.039	0.018	mg/Kg	☆	02/22/23 09:34	02/25/23 16:59	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Date Collected: 02/20/23 10:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 76.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.11	J	0.13	0.034	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Diethyl phthalate	ND		0.18	0.081	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Dimethyl phthalate	ND		0.18	0.037	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Di-n-butyl phthalate	ND		0.18	0.13	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Di-n-octyl phthalate	ND		0.18	0.074	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Fluoranthene	0.74		0.039	0.012	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Fluorene	0.22		0.039	0.0072	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Hexachlorobenzene	ND		0.039	0.0075	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Hexachlorobutadiene	ND		0.13	0.032	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Hexachlorocyclopentadiene	ND		0.87	0.16	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Hexachloroethane	ND		0.13	0.024	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Indeno[1,2,3-cd]pyrene	0.18		0.039	0.019	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Isophorone	ND		0.13	0.032	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
N-Nitrosodi-n-propylamine	ND		0.13	0.029	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
N-Nitrosodiphenylamine	ND		0.13	0.032	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Naphthalene	0.44		0.039	0.0063	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Nitrobenzene	ND		0.26	0.034	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Pentachlorophenol	ND		0.39	0.15	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Phenanthrene	0.92		0.039	0.0059	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Phenol	ND		0.13	0.021	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
Pyrene	0.66		0.039	0.0056	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2
3 & 4 Methylphenol	ND		1.1	0.076	mg/Kg	✳	02/22/23 09:34	02/25/23 16:59	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		46 - 137	02/22/23 09:34	02/25/23 16:59	2
Phenol-d5 (Surr)	46		26 - 120	02/22/23 09:34	02/25/23 16:59	2
Nitrobenzene-d5 (Surr)	43		25 - 120	02/22/23 09:34	02/25/23 16:59	2
2-Fluorophenol (Surr)	45		20 - 120	02/22/23 09:34	02/25/23 16:59	2
2-Fluorobiphenyl (Surr)	58		34 - 120	02/22/23 09:34	02/25/23 16:59	2
2,4,6-Tribromophenol (Surr)	62		10 - 120	02/22/23 09:34	02/25/23 16:59	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0084	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:23	1
Barium	0.55	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:23	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:23	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:23	1
Lead	0.0044	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:23	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:23	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:23	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.7		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	23.3		0.1	0.1	%			02/21/23 14:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Date Collected: 02/20/23 10:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 83.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.26	0.081	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,1,2,2-Tetrachloroethane	ND		0.26	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.26	0.070	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,1,2-Trichloroethane	ND		0.26	0.060	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,1-Dichloroethane	ND		0.26	0.050	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,1-Dichloroethene	ND		0.26	0.086	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,2,4-Trichlorobenzene	ND		0.26	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,2-Dibromo-3-Chloropropane	ND		0.52	0.23	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Ethylene Dibromide	ND		0.26	0.082	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,2-Dichlorobenzene	ND		0.26	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,2-Dichloroethane	ND		0.26	0.049	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,2-Dichloropropane	ND		0.26	0.039	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,3-Dichlorobenzene	ND		0.26	0.048	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
1,4-Dichlorobenzene	ND		0.26	0.057	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
2-Hexanone	ND		1.0	0.27	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.25	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Acetone	0.60	J	1.0	0.25	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Benzene	2.2		0.26	0.044	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Dichlorobromomethane	ND		0.26	0.064	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Bromoform	ND		0.26	0.24	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Bromomethane	ND		0.26	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Carbon disulfide	ND		0.26	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Carbon tetrachloride	ND		0.26	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Chlorobenzene	ND		0.26	0.037	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Chloroethane	ND		0.26	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Chloroform	ND		0.26	0.056	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Chloromethane	ND		0.26	0.069	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
cis-1,2-Dichloroethene	ND		0.26	0.042	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
cis-1,3-Dichloropropene	ND		0.26	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Cyclohexane	ND		0.52	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Chlorodibromomethane	ND		0.26	0.12	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Dichlorodifluoromethane	ND		0.26	0.055	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Ethylbenzene	ND		0.26	0.049	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Isopropylbenzene	ND		0.26	0.040	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Methyl acetate	ND		1.3	0.18	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Methyl tert-butyl ether	ND		0.26	0.039	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Methylcyclohexane	0.19	J	0.52	0.069	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Methylene Chloride	ND		0.52	0.40	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Styrene	ND		0.26	0.054	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Tetrachloroethene	ND		0.26	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Toluene	ND		0.26	0.25	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
trans-1,2-Dichloroethene	ND		0.26	0.065	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
trans-1,3-Dichloropropene	ND		0.26	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Trichloroethene	ND		0.26	0.15	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Trichlorofluoromethane	ND		0.26	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Vinyl chloride	1.4		0.26	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1
Xylenes, Total	0.18	J	0.52	0.095	mg/Kg	✳	02/21/23 19:38	02/23/23 20:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Date Collected: 02/20/23 10:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 83.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/21/23 19:38	02/23/23 20:08	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/23/23 20:08	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/23/23 20:08	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125	02/21/23 19:38	02/23/23 20:08	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.14		0.060	0.020	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
bis (2-chloroisopropyl) ether	ND		0.12	0.012	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4,5-Trichlorophenol	ND		0.18	0.083	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4,6-Trichlorophenol	ND		0.18	0.077	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4-Dichlorophenol	ND		0.18	0.053	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4-Dimethylphenol	ND		0.18	0.048	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4-Dinitrophenol	ND		0.40	0.17	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,4-Dinitrotoluene	ND		0.24	0.075	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2,6-Dinitrotoluene	ND		0.24	0.067	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Chloronaphthalene	ND		0.060	0.017	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Chlorophenol	ND		0.060	0.012	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Methylnaphthalene	0.76		0.018	0.0024	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Methylphenol	ND		0.24	0.037	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Nitroaniline	ND		0.24	0.048	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
2-Nitrophenol	ND		0.060	0.016	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
3,3'-Dichlorobenzidine	ND		0.12	0.052	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
3-Nitroaniline	ND		0.24	0.059	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4,6-Dinitro-2-methylphenol	ND		0.40	0.096	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Bromophenyl phenyl ether	ND		0.060	0.017	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Chloro-3-methylphenol	ND		0.18	0.054	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Chloroaniline	ND		0.18	0.036	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Chlorophenyl phenyl ether	ND		0.060	0.017	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Nitroaniline	ND		0.24	0.072	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
4-Nitrophenol	ND		0.40	0.11	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Acenaphthene	0.055		0.018	0.0034	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Acenaphthylene	0.055		0.018	0.0048	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Acetophenone	0.17		0.12	0.013	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Anthracene	0.099		0.018	0.0029	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Atrazine	ND		0.24	0.043	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzaldehyde	ND		0.12	0.028	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzo[a]anthracene	0.26		0.018	0.0041	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzo[a]pyrene	0.22		0.018	0.011	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzo[b]fluoranthene	0.36		0.018	0.0078	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzo[g,h,i]perylene	0.14		0.018	0.0085	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Benzo[k]fluoranthene	0.11		0.018	0.0083	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Bis(2-chloroethoxy)methane	ND		0.12	0.014	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Bis(2-chloroethyl)ether	ND		0.12	0.014	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Bis(2-ethylhexyl) phthalate	0.073 J		0.084	0.061	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Butyl benzyl phthalate	ND		0.084	0.026	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Caprolactam	ND		0.40	0.090	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Carbazole	0.036 J		0.060	0.023	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Chrysene	0.44		0.018	0.0018	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1
Dibenz(a,h)anthracene	0.049		0.018	0.0083	mg/Kg	☆	02/22/23 09:34	02/24/23 13:22	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Date Collected: 02/20/23 10:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 83.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.20		0.060	0.016	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Diethyl phthalate	ND		0.084	0.037	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Dimethyl phthalate	ND		0.084	0.017	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Di-n-butyl phthalate	0.084		0.084	0.061	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Di-n-octyl phthalate	ND		0.084	0.034	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Fluoranthene	0.36		0.018	0.0054	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Fluorene	0.087		0.018	0.0033	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Hexachlorobenzene	ND		0.018	0.0034	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Hexachlorobutadiene	ND		0.060	0.014	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Hexachlorocyclopentadiene	ND		0.40	0.075	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Hexachloroethane	ND		0.060	0.011	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Indeno[1,2,3-cd]pyrene	0.11		0.018	0.0088	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Isophorone	ND		0.060	0.014	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
N-Nitrosodi-n-propylamine	ND		0.060	0.013	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
N-Nitrosodiphenylamine	ND		0.060	0.014	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Naphthalene	0.63		0.018	0.0029	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Nitrobenzene	ND		0.12	0.016	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Pentachlorophenol	ND		0.18	0.070	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Phenanthrene	0.65		0.018	0.0027	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Phenol	ND		0.060	0.0096	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
Pyrene	0.39		0.018	0.0026	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1
3 & 4 Methylphenol	ND		0.48	0.035	mg/Kg	✱	02/22/23 09:34	02/24/23 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	64		46 - 137	02/22/23 09:34	02/24/23 13:22	1
Phenol-d5 (Surr)	58		26 - 120	02/22/23 09:34	02/24/23 13:22	1
Nitrobenzene-d5 (Surr)	57		25 - 120	02/22/23 09:34	02/24/23 13:22	1
2-Fluorophenol (Surr)	46		20 - 120	02/22/23 09:34	02/24/23 13:22	1
2-Fluorobiphenyl (Surr)	62		34 - 120	02/22/23 09:34	02/24/23 13:22	1
2,4,6-Tribromophenol (Surr)	45		10 - 120	02/22/23 09:34	02/24/23 13:22	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0073	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:27	1
Barium	0.88	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:27	1
Cadmium	0.0022	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:27	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:27	1
Lead	0.0098	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:27	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:27	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:27	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0017	J	0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.1		0.1	0.1	%			02/22/23 11:26	1
Percent Moisture (EPA Moisture)	16.9		0.1	0.1	%			02/22/23 11:26	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Date Collected: 02/20/23 11:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 98.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.17	0.054	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,1,2,2-Tetrachloroethane	ND		0.17	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.17	0.046	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,1,2-Trichloroethane	ND		0.17	0.039	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,1-Dichloroethane	ND		0.17	0.033	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,1-Dichloroethene	ND		0.17	0.056	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,2,4-Trichlorobenzene	ND		0.17	0.091	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,2-Dibromo-3-Chloropropane	ND		0.34	0.15	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Ethylene Dibromide	ND		0.17	0.054	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,2-Dichlorobenzene	ND		0.17	0.082	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,2-Dichloroethane	ND		0.17	0.032	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,2-Dichloropropane	ND		0.17	0.025	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,3-Dichlorobenzene	ND		0.17	0.032	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
1,4-Dichlorobenzene	ND		0.17	0.038	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
2-Butanone (MEK)	ND		0.69	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
2-Hexanone	ND		0.69	0.18	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
4-Methyl-2-pentanone (MIBK)	ND		0.69	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Acetone	0.38	J	0.69	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Benzene	2.7		0.17	0.029	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Dichlorobromomethane	ND		0.17	0.042	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Bromoform	ND		0.17	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Bromomethane	ND		0.17	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Carbon disulfide	ND		0.17	0.074	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Carbon tetrachloride	ND		0.17	0.070	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Chlorobenzene	ND		0.17	0.024	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Chloroethane	ND		0.17	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Chloroform	ND		0.17	0.037	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Chloromethane	ND		0.17	0.045	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
cis-1,2-Dichloroethene	ND		0.17	0.027	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
cis-1,3-Dichloropropene	ND		0.17	0.085	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Cyclohexane	ND		0.34	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Chlorodibromomethane	ND		0.17	0.080	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Dichlorodifluoromethane	ND		0.17	0.036	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Ethylbenzene	ND		0.17	0.032	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Isopropylbenzene	ND		0.17	0.026	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Methyl acetate	0.12	J	0.86	0.12	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Methyl tert-butyl ether	ND		0.17	0.025	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Methylcyclohexane	0.088	J	0.34	0.045	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Methylene Chloride	ND		0.34	0.26	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Styrene	ND		0.17	0.036	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Tetrachloroethene	ND		0.17	0.067	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Toluene	ND		0.17	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
trans-1,2-Dichloroethene	ND		0.17	0.043	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
trans-1,3-Dichloropropene	ND		0.17	0.072	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Trichloroethene	ND		0.17	0.098	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Trichlorofluoromethane	ND		0.17	0.094	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Vinyl chloride	2.4		0.17	0.084	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1
Xylenes, Total	0.11	J	0.34	0.062	mg/Kg	✳	02/21/23 19:38	02/23/23 20:34	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Date Collected: 02/20/23 11:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 98.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/23/23 20:34	1
Dibromofluoromethane (Surr)	94		41 - 138	02/21/23 19:38	02/23/23 20:34	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/23/23 20:34	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125	02/21/23 19:38	02/23/23 20:34	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.083	J	0.20	0.069	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
bis (2-chloroisopropyl) ether	ND		0.40	0.040	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4,5-Trichlorophenol	ND		0.60	0.28	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4,6-Trichlorophenol	ND		0.60	0.26	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4-Dichlorophenol	ND		0.60	0.18	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4-Dimethylphenol	ND		0.60	0.16	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4-Dinitrophenol	ND		1.3	0.57	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,4-Dinitrotoluene	ND		0.81	0.25	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2,6-Dinitrotoluene	ND		0.81	0.23	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Chloronaphthalene	ND		0.20	0.056	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Chlorophenol	ND		0.20	0.040	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Methylnaphthalene	0.32		0.060	0.0079	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Methylphenol	ND		0.81	0.12	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Nitroaniline	ND		0.81	0.16	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
2-Nitrophenol	ND		0.20	0.052	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
3,3'-Dichlorobenzidine	ND		0.40	0.17	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
3-Nitroaniline	ND		0.81	0.20	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4,6-Dinitro-2-methylphenol	ND		1.3	0.32	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Bromophenyl phenyl ether	ND		0.20	0.056	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Chloro-3-methylphenol	ND		0.60	0.18	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Chloroaniline	ND		0.60	0.12	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Chlorophenyl phenyl ether	ND		0.20	0.056	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Nitroaniline	ND		0.81	0.24	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
4-Nitrophenol	ND		1.3	0.38	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Acenaphthene	0.046	J	0.060	0.012	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Acenaphthylene	0.039	J	0.060	0.016	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Acetophenone	ND		0.40	0.044	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Anthracene	0.071		0.060	0.0097	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Atrazine	ND		0.81	0.15	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzaldehyde	ND		0.40	0.093	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzo[a]anthracene	0.22		0.060	0.014	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzo[a]pyrene	0.18		0.060	0.038	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzo[b]fluoranthene	0.32		0.060	0.026	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzo[g,h,i]perylene	0.12		0.060	0.029	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Benzo[k]fluoranthene	0.094		0.060	0.028	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Bis(2-chloroethoxy)methane	ND		0.40	0.048	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Bis(2-chloroethyl)ether	ND		0.40	0.048	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Bis(2-ethylhexyl) phthalate	ND		0.28	0.21	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Butyl benzyl phthalate	ND		0.28	0.089	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Caprolactam	ND		1.3	0.30	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Carbazole	ND		0.20	0.077	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Chrysene	0.29		0.060	0.0060	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4
Dibenz(a,h)anthracene	ND		0.060	0.028	mg/Kg	☆	02/22/23 09:34	02/24/23 15:23	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Date Collected: 02/20/23 11:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 98.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.11	J	0.20	0.052	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Diethyl phthalate	ND		0.28	0.12	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Dimethyl phthalate	ND		0.28	0.056	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Di-n-butyl phthalate	ND		0.28	0.20	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Di-n-octyl phthalate	ND		0.28	0.11	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Fluoranthene	0.36		0.060	0.018	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Fluorene	0.073		0.060	0.011	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Hexachlorobenzene	ND		0.060	0.011	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Hexachlorobutadiene	ND		0.20	0.048	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Hexachlorocyclopentadiene	ND		1.3	0.25	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Hexachloroethane	ND		0.20	0.036	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Indeno[1,2,3-cd]pyrene	0.094		0.060	0.030	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Isophorone	ND		0.20	0.048	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
N-Nitrosodi-n-propylamine	ND		0.20	0.044	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
N-Nitrosodiphenylamine	ND		0.20	0.048	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Naphthalene	0.37		0.060	0.0097	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Nitrobenzene	ND		0.40	0.052	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Pentachlorophenol	ND		0.60	0.23	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Phenanthrene	0.45		0.060	0.0090	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Phenol	ND		0.20	0.032	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
Pyrene	0.42		0.060	0.0086	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4
3 & 4 Methylphenol	ND		1.6	0.12	mg/Kg	✳	02/22/23 09:34	02/24/23 15:23	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	71		46 - 137	02/22/23 09:34	02/24/23 15:23	4
Phenol-d5 (Surr)	60		26 - 120	02/22/23 09:34	02/24/23 15:23	4
Nitrobenzene-d5 (Surr)	63		25 - 120	02/22/23 09:34	02/24/23 15:23	4
2-Fluorophenol (Surr)	56		20 - 120	02/22/23 09:34	02/24/23 15:23	4
2-Fluorobiphenyl (Surr)	61		34 - 120	02/22/23 09:34	02/24/23 15:23	4
2,4,6-Tribromophenol (Surr)	44		10 - 120	02/22/23 09:34	02/24/23 15:23	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0074	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:32	1
Barium	1.0	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:32	1
Cadmium	0.0027	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:32	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:32	1
Lead	0.0070	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:32	1
Selenium	0.0065	J	0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:32	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:32	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	98.6		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	1.4		0.1	0.1	%			02/21/23 14:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Date Collected: 02/20/23 11:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 72.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		14	4.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,1,2,2-Tetrachloroethane	ND		14	8.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		14	3.8	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,1,2-Trichloroethane	ND		14	3.2	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,1-Dichloroethane	ND		14	2.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,1-Dichloroethene	ND		14	4.6	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,2,4-Trichlorobenzene	ND		14	7.5	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,2-Dibromo-3-Chloropropane	ND		28	12	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Ethylene Dibromide	ND		14	4.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,2-Dichlorobenzene	ND		14	6.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,2-Dichloroethane	ND		14	2.6	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,2-Dichloropropane	ND		14	2.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,3-Dichlorobenzene	ND		14	2.6	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
1,4-Dichlorobenzene	ND		14	3.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
2-Butanone (MEK)	ND		56	8.8	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
2-Hexanone	ND		56	15	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
4-Methyl-2-pentanone (MIBK)	ND		56	13	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Acetone	ND		56	14	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Benzene	55		14	2.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Dichlorobromomethane	ND		14	3.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Bromoform	ND		14	13	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Bromomethane	ND		14	9.3	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Carbon disulfide	ND		14	6.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Carbon tetrachloride	ND		14	5.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Chlorobenzene	ND		14	2.0	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Chloroethane	ND		14	8.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Chloroform	ND		14	3.0	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Chloromethane	ND		14	3.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
cis-1,2-Dichloroethene	ND		14	2.2	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
cis-1,3-Dichloropropene	ND		14	7.0	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Cyclohexane	ND		28	9.2	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Chlorodibromomethane	ND		14	6.6	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Dichlorodifluoromethane	ND		14	3.0	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Ethylbenzene	ND		14	2.6	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Isopropylbenzene	ND		14	2.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Methyl acetate	ND		70	9.4	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Methyl tert-butyl ether	ND		14	2.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Methylcyclohexane	ND		28	3.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Methylene Chloride	ND		28	22	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Styrene	ND		14	2.9	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Tetrachloroethene	ND		14	5.5	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Toluene	ND		14	13	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
trans-1,2-Dichloroethene	ND		14	3.5	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
trans-1,3-Dichloropropene	ND		14	5.9	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Trichloroethene	ND		14	8.0	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Trichlorofluoromethane	ND		14	7.7	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Vinyl chloride	85		14	6.9	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40
Xylenes, Total	ND		28	5.1	mg/Kg	✱	02/21/23 19:38	02/24/23 14:57	40

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Date Collected: 02/20/23 11:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 72.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/24/23 14:57	40
Dibromofluoromethane (Surr)	105		41 - 138	02/21/23 19:38	02/24/23 14:57	40
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/24/23 14:57	40
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/21/23 19:38	02/24/23 14:57	40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.4	0.47	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
bis (2-chloroisopropyl) ether	ND		2.7	0.27	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4,5-Trichlorophenol	ND		4.1	1.9	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4,6-Trichlorophenol	ND		4.1	1.8	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4-Dichlorophenol	ND		4.1	1.2	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4-Dimethylphenol	ND		4.1	1.1	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4-Dinitrophenol	ND		9.0	3.9	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,4-Dinitrotoluene	ND		5.5	1.7	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2,6-Dinitrotoluene	ND		5.5	1.5	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Chloronaphthalene	ND		1.4	0.38	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Chlorophenol	ND		1.4	0.27	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Methylnaphthalene	0.46		0.41	0.054	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Methylphenol	ND		5.5	0.85	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Nitroaniline	ND		5.5	1.1	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
2-Nitrophenol	ND		1.4	0.36	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
3,3'-Dichlorobenzidine	ND		2.7	1.2	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
3-Nitroaniline	ND		5.5	1.3	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4,6-Dinitro-2-methylphenol	ND		9.0	2.2	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Bromophenyl phenyl ether	ND		1.4	0.38	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Chloro-3-methylphenol	ND		4.1	1.2	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Chloroaniline	ND		4.1	0.82	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Chlorophenyl phenyl ether	ND		1.4	0.38	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Nitroaniline	ND		5.5	1.6	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
4-Nitrophenol	ND		9.0	2.6	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Acenaphthene	ND		0.41	0.078	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Acenaphthylene	ND		0.41	0.11	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Acetophenone	ND		2.7	0.30	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Anthracene	0.12	J	0.41	0.066	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Atrazine	ND		5.5	0.99	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzaldehyde	ND		2.7	0.63	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzo[a]anthracene	0.30	J	0.41	0.093	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzo[a]pyrene	ND		0.41	0.26	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzo[b]fluoranthene	0.39	J	0.41	0.18	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzo[g,h,i]perylene	ND		0.41	0.19	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Benzo[k]fluoranthene	ND		0.41	0.19	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Bis(2-chloroethoxy)methane	ND		2.7	0.33	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Bis(2-chloroethyl)ether	ND		2.7	0.33	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Bis(2-ethylhexyl) phthalate	ND		1.9	1.4	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Butyl benzyl phthalate	ND		1.9	0.60	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Caprolactam	ND		9.0	2.1	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Carbazole	ND		1.4	0.52	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Chrysene	0.45		0.41	0.041	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20
Dibenz(a,h)anthracene	ND		0.41	0.19	mg/Kg	☆	02/22/23 09:34	02/24/23 16:11	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Date Collected: 02/20/23 11:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 72.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.4	0.36	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Diethyl phthalate	ND		1.9	0.85	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Dimethyl phthalate	ND		1.9	0.38	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Di-n-butyl phthalate	ND		1.9	1.4	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Di-n-octyl phthalate	ND		1.9	0.77	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Fluoranthene	0.40	J	0.41	0.12	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Fluorene	0.12	J	0.41	0.075	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Hexachlorobenzene	ND		0.41	0.078	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Hexachlorobutadiene	ND		1.4	0.33	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Hexachlorocyclopentadiene	ND		9.0	1.7	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Hexachloroethane	ND		1.4	0.25	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Indeno[1,2,3-cd]pyrene	ND		0.41	0.20	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Isophorone	ND		1.4	0.33	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
N-Nitrosodi-n-propylamine	ND		1.4	0.30	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
N-Nitrosodiphenylamine	ND		1.4	0.33	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Naphthalene	0.63		0.41	0.066	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Nitrobenzene	ND		2.7	0.36	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Pentachlorophenol	ND		4.1	1.6	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Phenanthrene	0.50		0.41	0.061	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Phenol	ND		1.4	0.22	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
Pyrene	0.65		0.41	0.059	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20
3 & 4 Methylphenol	ND		11	0.79	mg/Kg	✳	02/22/23 09:34	02/24/23 16:11	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	55		46 - 137	02/22/23 09:34	02/24/23 16:11	20
Phenol-d5 (Surr)	48		26 - 120	02/22/23 09:34	02/24/23 16:11	20
Nitrobenzene-d5 (Surr)	48		25 - 120	02/22/23 09:34	02/24/23 16:11	20
2-Fluorophenol (Surr)	38		20 - 120	02/22/23 09:34	02/24/23 16:11	20
2-Fluorobiphenyl (Surr)	48		34 - 120	02/22/23 09:34	02/24/23 16:11	20
2,4,6-Tribromophenol (Surr)	27		10 - 120	02/22/23 09:34	02/24/23 16:11	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0047	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:36	1
Barium	0.69	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:36	1
Cadmium	0.0033	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:36	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:36	1
Lead	0.013	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:36	1
Selenium	0.0066	J	0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:36	1
Silver	0.00074	J	0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:36	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	72.6		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	27.4		0.1	0.1	%			02/21/23 14:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 17:23	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 17:23	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 17:23	1
Benzene	0.078		0.025	0.00042	mg/L			02/23/23 17:23	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 17:23	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 17:23	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 17:23	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 17:23	1
Vinyl chloride	0.11		0.025	0.00045	mg/L			02/23/23 17:23	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 17:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					02/23/23 17:23	1
Dibromofluoromethane (Surr)	95		71 - 121					02/23/23 17:23	1
4-Bromofluorobenzene (Surr)	112		80 - 120					02/23/23 17:23	1
1,2-Dichloroethane-d4 (Surr)	93		76 - 120					02/23/23 17:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 18:09	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 18:09	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 18:09	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 18:09	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 18:09	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 18:09	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 18:09	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 18:09	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 18:09	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 18:09	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 18:09	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	119		46 - 137				02/23/23 12:44	02/24/23 18:09	1
Phenol-d5 (Surr)	61		26 - 120				02/23/23 12:44	02/24/23 18:09	1
Nitrobenzene-d5 (Surr)	72		24 - 120				02/23/23 12:44	02/24/23 18:09	1
2-Fluorophenol (Surr)	70		19 - 120				02/23/23 12:44	02/24/23 18:09	1
2-Fluorobiphenyl (Surr)	99		33 - 120				02/23/23 12:44	02/24/23 18:09	1
2,4,6-Tribromophenol (Surr)	103		10 - 120				02/23/23 12:44	02/24/23 18:09	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 11:13	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 11:13	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 11:13	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 11:13	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 11:13	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 11:13	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 11:13	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	77		10 - 145	02/23/23 12:51	02/24/23 11:13	1
DCB Decachlorobiphenyl	80		10 - 145	02/23/23 12:51	02/24/23 11:13	1
Tetrachloro-m-xylene	61		10 - 123	02/23/23 12:51	02/24/23 11:13	1
Tetrachloro-m-xylene	67		10 - 123	02/23/23 12:51	02/24/23 11:13	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 05:47	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 05:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	70		26 - 136	02/24/23 19:47	02/27/23 05:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.2		0.1	0.1	%			02/21/23 11:57	1
Percent Moisture (EPA Moisture)	18.8		0.1	0.1	%			02/21/23 11:57	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 81.2

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		63	31	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1221	ND		63	38	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1232	ND		63	26	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1242	ND		63	24	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1248	ND		63	21	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1254	ND		63	26	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1260	ND		63	26	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1262	ND		63	28	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Aroclor-1268	ND		63	20	ug/Kg	✳	02/22/23 08:41	02/23/23 09:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	95		10 - 149				02/22/23 08:41	02/23/23 09:51	1
DCB Decachlorobiphenyl	95	p	10 - 174				02/22/23 08:41	02/23/23 09:51	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.73	0.24	ng/g	✳	02/24/23 17:55	02/27/23 12:01	1
Perfluorooctanesulfonic acid	0.71	J	0.73	0.24	ng/g	✳	02/24/23 17:55	02/27/23 12:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	78		26 - 159				02/24/23 17:55	02/27/23 12:01	1
13C8 PFOS	84		41 - 154				02/24/23 17:55	02/27/23 12:01	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Date Collected: 02/20/23 11:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.33	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,1,2,2-Tetrachloroethane	ND		0.33	0.20	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.33	0.089	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,1,2-Trichloroethane	ND		0.33	0.075	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,1-Dichloroethane	ND		0.33	0.064	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,1-Dichloroethene	ND		0.33	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,2,4-Trichlorobenzene	ND		0.33	0.18	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,2-Dibromo-3-Chloropropane	ND		0.66	0.29	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Ethylene Dibromide	ND		0.33	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,2-Dichlorobenzene	ND		0.33	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,2-Dichloroethane	ND		0.33	0.062	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,2-Dichloropropane	ND		0.33	0.049	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,3-Dichlorobenzene	ND		0.33	0.061	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
1,4-Dichlorobenzene	ND		0.33	0.073	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
2-Butanone (MEK)	ND		1.3	0.21	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
2-Hexanone	ND		1.3	0.35	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.31	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Acetone	0.78	J	1.3	0.32	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Benzene	2.1		0.33	0.056	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Dichlorobromomethane	ND		0.33	0.081	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Bromoform	ND		0.33	0.30	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Bromomethane	ND		0.33	0.22	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Carbon disulfide	ND		0.33	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Carbon tetrachloride	ND		0.33	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Chlorobenzene	ND		0.33	0.046	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Chloroethane	ND		0.33	0.20	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Chloroform	ND		0.33	0.071	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Chloromethane	0.11	J	0.33	0.087	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
cis-1,2-Dichloroethene	ND		0.33	0.053	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
cis-1,3-Dichloropropene	ND		0.33	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Cyclohexane	ND		0.66	0.22	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Chlorodibromomethane	ND		0.33	0.15	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Dichlorodifluoromethane	ND		0.33	0.070	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Ethylbenzene	ND		0.33	0.062	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Isopropylbenzene	0.061	J	0.33	0.050	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Methyl acetate	ND		1.7	0.22	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Methyl tert-butyl ether	ND		0.33	0.049	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Methylcyclohexane	0.20	J	0.66	0.087	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Methylene Chloride	ND		0.66	0.51	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Styrene	ND		0.33	0.069	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Tetrachloroethene	ND		0.33	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Toluene	ND		0.33	0.32	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
trans-1,2-Dichloroethene	ND		0.33	0.082	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
trans-1,3-Dichloropropene	ND		0.33	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Trichloroethene	ND		0.33	0.19	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Trichlorofluoromethane	ND		0.33	0.18	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Vinyl chloride	5.6		0.33	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1
Xylenes, Total	ND		0.66	0.12	mg/Kg	✳	02/21/23 19:38	02/23/23 21:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Date Collected: 02/20/23 11:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/23/23 21:24	1
Dibromofluoromethane (Surr)	96		41 - 138	02/21/23 19:38	02/23/23 21:24	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/23/23 21:24	1
1,2-Dichloroethane-d4 (Surr)	109		58 - 125	02/21/23 19:38	02/23/23 21:24	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4-Dinitrophenol	ND		9.8	4.2	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Methylnaphthalene	ND		0.45	0.058	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Methylphenol	ND		6.0	0.93	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4,6-Dinitro-2-methylphenol	ND		9.8	2.4	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Chloroaniline	ND		4.5	0.90	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
4-Nitrophenol	ND		9.8	2.8	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Acenaphthene	ND		0.45	0.085	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Acenaphthylene	ND		0.45	0.12	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Acetophenone	1.8	J	3.0	0.33	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Anthracene	ND		0.45	0.072	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Atrazine	ND		6.0	1.1	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzaldehyde	ND		3.0	0.69	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzo[a]anthracene	ND		0.45	0.10	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzo[a]pyrene	ND		0.45	0.28	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzo[b]fluoranthene	ND		0.45	0.19	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzo[g,h,i]perylene	ND		0.45	0.21	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Benzo[k]fluoranthene	ND		0.45	0.21	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Caprolactam	ND		9.8	2.2	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Carbazole	ND		1.5	0.57	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Chrysene	ND		0.45	0.044	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☆	02/25/23 15:12	02/28/23 13:08	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Date Collected: 02/20/23 11:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.5	0.39	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Diethyl phthalate	ND		2.1	0.93	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Fluoranthene	ND		0.45	0.13	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Fluorene	ND		0.45	0.082	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Hexachlorocyclopentadiene	ND		9.8	1.9	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Hexachloroethane	ND		1.5	0.27	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Indeno[1,2,3-cd]pyrene	ND		0.45	0.22	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Isophorone	ND		1.5	0.36	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Naphthalene	0.33	J	0.45	0.072	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Nitrobenzene	ND		3.0	0.39	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Pentachlorophenol	ND		4.5	1.7	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Phenanthrene	0.13	J	0.45	0.067	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Phenol	ND		1.5	0.24	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
Pyrene	ND		0.45	0.064	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	✱	02/25/23 15:12	02/28/23 13:08	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	21	S1-	46 - 137	02/25/23 15:12	02/28/23 13:08	4
Phenol-d5 (Surr)	17	S1-	26 - 120	02/25/23 15:12	02/28/23 13:08	4
Nitrobenzene-d5 (Surr)	17	S1-	25 - 120	02/25/23 15:12	02/28/23 13:08	4
2-Fluorophenol (Surr)	18	S1-	20 - 120	02/25/23 15:12	02/28/23 13:08	4
2-Fluorobiphenyl (Surr)	20	S1-	34 - 120	02/25/23 15:12	02/28/23 13:08	4
2,4,6-Tribromophenol (Surr)	30		10 - 120	02/25/23 15:12	02/28/23 13:08	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0075	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:49	1
Barium	0.29	J B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:49	1
Cadmium	ND		0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:49	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:49	1
Lead	ND		0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:49	1
Selenium	0.0075	J	0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:49	1
Silver	0.00063	J	0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:49	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.8		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	20.2		0.1	0.1	%			02/21/23 14:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.092	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,1-Dichloroethane	ND		0.34	0.066	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,2-Dibromo-3-Chloropropane	ND		0.69	0.30	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,2-Dichloropropane	ND		0.34	0.051	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
2-Butanone (MEK)	ND		1.4	0.22	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.33	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Acetone	1.2	J	1.4	0.33	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Benzene	12		0.34	0.058	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Chloroethane	ND		0.34	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Chloromethane	0.23	J	0.34	0.090	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
cis-1,2-Dichloroethene	ND		0.34	0.055	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Cyclohexane	ND		0.69	0.22	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Dichlorodifluoromethane	ND		0.34	0.073	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Ethylbenzene	0.073	J	0.34	0.064	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Isopropylbenzene	ND		0.34	0.052	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Methyl acetate	0.53	J	1.7	0.23	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Methyl tert-butyl ether	ND		0.34	0.051	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Methylcyclohexane	ND		0.69	0.090	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Methylene Chloride	ND		0.69	0.52	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Styrene	ND		0.34	0.071	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Toluene	0.46		0.34	0.33	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
trans-1,2-Dichloroethene	ND		0.34	0.085	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Trichloroethene	ND		0.34	0.20	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Vinyl chloride	10		0.34	0.17	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1
Xylenes, Total	ND		0.69	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 21:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/21/23 19:38	02/23/23 21:49	1
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/24/23 15:48	4
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/23/23 21:49	1
Dibromofluoromethane (Surr)	101		41 - 138	02/21/23 19:38	02/24/23 15:48	4
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/23/23 21:49	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/24/23 15:48	4
1,2-Dichloroethane-d4 (Surr)	105		58 - 125	02/21/23 19:38	02/23/23 21:49	1
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/21/23 19:38	02/24/23 15:48	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
bis (2-chloroisopropyl) ether	ND		3.0	0.30	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4-Dinitrophenol	ND		9.9	4.2	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Methylnaphthalene	0.45		0.45	0.059	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Methylphenol	ND		6.0	0.93	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
3,3'-Dichlorobenzidine	ND		3.0	1.3	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4,6-Dinitro-2-methylphenol	ND		9.9	2.4	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Chloro-3-methylphenol	ND		4.5	1.3	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Chloroaniline	ND		4.5	0.90	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
4-Nitrophenol	ND		9.9	2.8	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Acenaphthene	ND		0.45	0.085	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Acenaphthylene	ND		0.45	0.12	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Acetophenone	2.0 J		3.0	0.33	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Anthracene	ND		0.45	0.072	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzo[a]anthracene	ND		0.45	0.10	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzo[a]pyrene	ND		0.45	0.28	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzo[b]fluoranthene	ND		0.45	0.19	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzo[g,h,i]perylene	ND		0.45	0.21	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Benzo[k]fluoranthene	ND		0.45	0.21	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/25/23 15:12	02/28/23 12:20	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		9.9	2.2	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Carbazole	ND		1.5	0.57	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Chrysene	0.11	J	0.45	0.045	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Dibenzofuran	ND		1.5	0.39	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Diethyl phthalate	ND		2.1	0.93	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Di-n-octyl phthalate	ND		2.1	0.84	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Fluoranthene	ND		0.45	0.13	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Fluorene	0.14	J	0.45	0.082	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Hexachlorobenzene	ND		0.45	0.085	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Hexachlorocyclopentadiene	ND		9.9	1.9	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Hexachloroethane	ND		1.5	0.27	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Indeno[1,2,3-cd]pyrene	ND		0.45	0.22	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Isophorone	ND		1.5	0.36	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Naphthalene	1.1		0.45	0.072	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Nitrobenzene	ND		3.0	0.39	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Pentachlorophenol	ND		4.5	1.7	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Phenanthrene	0.28	J	0.45	0.067	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Phenol	1.9		1.5	0.24	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
Pyrene	ND		0.45	0.064	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4
3 & 4 Methylphenol	ND		12	0.87	mg/Kg	☆	02/25/23 15:12	02/28/23 12:20	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	29	S1-	46 - 137	02/25/23 15:12	02/28/23 12:20	4
Phenol-d5 (Surr)	25	S1-	26 - 120	02/25/23 15:12	02/28/23 12:20	4
Nitrobenzene-d5 (Surr)	23	S1-	25 - 120	02/25/23 15:12	02/28/23 12:20	4
2-Fluorophenol (Surr)	25		20 - 120	02/25/23 15:12	02/28/23 12:20	4
2-Fluorobiphenyl (Surr)	30	S1-	34 - 120	02/25/23 15:12	02/28/23 12:20	4
2,4,6-Tribromophenol (Surr)	32		10 - 120	02/25/23 15:12	02/28/23 12:20	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:53	1
Barium	0.52	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:53	1
Cadmium	0.0039	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:53	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:53	1
Lead	0.024	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:53	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:53	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:53	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:51	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.2		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	20.8		0.1	0.1	%			02/21/23 14:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 73.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.37	0.12	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,1,2,2-Tetrachloroethane	ND		0.37	0.22	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.37	0.10	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,1,2-Trichloroethane	ND		0.37	0.085	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,1-Dichloroethane	ND		0.37	0.071	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,1-Dichloroethene	ND		0.37	0.12	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,2,4-Trichlorobenzene	ND		0.37	0.20	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,2-Dibromo-3-Chloropropane	ND		0.74	0.33	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Ethylene Dibromide	ND		0.37	0.12	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,2-Dichlorobenzene	ND		0.37	0.18	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,2-Dichloroethane	ND		0.37	0.070	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,2-Dichloropropane	ND		0.37	0.055	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,3-Dichlorobenzene	ND		0.37	0.068	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
1,4-Dichlorobenzene	ND		0.37	0.082	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
2-Hexanone	ND		1.5	0.39	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.35	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Acetone	ND		1.5	0.36	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Benzene	0.19	J	0.62	0.10	mg/Kg	✳	02/21/23 19:38	02/23/23 22:14	1.6666
Dichlorobromomethane	ND		0.37	0.090	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Bromoform	ND		0.37	0.34	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Bromomethane	ND		0.37	0.25	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Carbon disulfide	ND		0.37	0.16	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Carbon tetrachloride	ND		0.37	0.15	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Chlorobenzene	ND		0.37	0.052	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Chloroethane	ND		0.37	0.22	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Chloroform	ND		0.37	0.080	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Chloromethane	0.12	J	0.37	0.098	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
cis-1,2-Dichloroethene	ND		0.37	0.059	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
cis-1,3-Dichloropropene	ND		0.37	0.18	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Cyclohexane	ND		0.74	0.24	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Chlorodibromomethane	ND		0.37	0.17	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Dichlorodifluoromethane	ND		0.37	0.079	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Ethylbenzene	0.18	J	0.37	0.070	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Isopropylbenzene	0.061	J	0.37	0.056	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Methyl acetate	0.42	J	1.9	0.25	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Methyl tert-butyl ether	ND		0.37	0.055	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Methylcyclohexane	0.24	J	0.74	0.098	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Methylene Chloride	ND		0.74	0.57	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Styrene	ND		0.37	0.077	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Tetrachloroethene	ND		0.37	0.14	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Toluene	0.88		0.37	0.36	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
trans-1,2-Dichloroethene	ND		0.37	0.092	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
trans-1,3-Dichloropropene	ND		0.37	0.16	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Trichloroethene	ND		0.37	0.21	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Trichlorofluoromethane	ND		0.37	0.20	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Vinyl chloride	0.44		0.37	0.18	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1
Xylenes, Total	0.45	J	0.74	0.14	mg/Kg	✳	02/21/23 19:38	02/24/23 15:23	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 73.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/23/23 22:14	1.6666
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/24/23 15:23	1
Dibromofluoromethane (Surr)	98		41 - 138	02/21/23 19:38	02/23/23 22:14	1.6666
Dibromofluoromethane (Surr)	99		41 - 138	02/21/23 19:38	02/24/23 15:23	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/23/23 22:14	1.6666
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/24/23 15:23	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125	02/21/23 19:38	02/23/23 22:14	1.6666
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/21/23 19:38	02/24/23 15:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.24	J	0.27	0.091	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
bis (2-chloroisopropyl) ether	ND		0.54	0.054	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4,5-Trichlorophenol	ND		0.81	0.37	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4,6-Trichlorophenol	ND		0.81	0.34	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4-Dichlorophenol	ND		0.81	0.24	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4-Dimethylphenol	ND		0.81	0.22	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4-Dinitrophenol	ND		1.8	0.76	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,4-Dinitrotoluene	ND		1.1	0.33	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2,6-Dinitrotoluene	ND		1.1	0.30	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Chloronaphthalene	ND		0.27	0.075	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Chlorophenol	ND		0.27	0.054	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Methylnaphthalene	0.97		0.081	0.011	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Methylphenol	ND		1.1	0.17	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Nitroaniline	ND		1.1	0.22	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
2-Nitrophenol	ND		0.27	0.070	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
3,3'-Dichlorobenzidine	ND		0.54	0.23	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
3-Nitroaniline	ND		1.1	0.26	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4,6-Dinitro-2-methylphenol	ND		1.8	0.43	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Bromophenyl phenyl ether	ND		0.27	0.075	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Chloro-3-methylphenol	ND		0.81	0.24	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Chloroaniline	ND		0.81	0.16	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Chlorophenyl phenyl ether	ND		0.27	0.075	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Nitroaniline	ND		1.1	0.32	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
4-Nitrophenol	ND		1.8	0.51	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Acenaphthene	0.090		0.081	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Acenaphthylene	0.036	J	0.081	0.022	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Acetophenone	0.93		0.54	0.059	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Anthracene	0.082		0.081	0.013	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Atrazine	ND		1.1	0.19	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzaldehyde	ND		0.54	0.12	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzo[a]anthracene	0.19		0.081	0.018	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzo[a]pyrene	0.18		0.081	0.050	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzo[b]fluoranthene	0.21		0.081	0.035	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzo[g,h,i]perylene	0.081		0.081	0.038	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Benzo[k]fluoranthene	0.062	J	0.081	0.037	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Bis(2-chloroethoxy)methane	ND		0.54	0.065	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Bis(2-chloroethyl)ether	ND		0.54	0.065	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Bis(2-ethylhexyl) phthalate	ND		0.38	0.27	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4
Butyl benzyl phthalate	ND		0.38	0.12	mg/Kg	☼	02/22/23 09:34	02/24/23 14:59	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 73.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.8	0.40	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Carbazole	ND		0.27	0.10	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Chrysene	0.32		0.081	0.0080	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Dibenz(a,h)anthracene	ND		0.081	0.037	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Dibenzofuran	0.16	J	0.27	0.070	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Diethyl phthalate	ND		0.38	0.17	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Dimethyl phthalate	ND		0.38	0.075	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Di-n-butyl phthalate	ND		0.38	0.27	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Di-n-octyl phthalate	ND		0.38	0.15	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Fluoranthene	0.21		0.081	0.024	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Fluorene	0.25		0.081	0.015	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Hexachlorobenzene	ND		0.081	0.015	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Hexachlorobutadiene	ND		0.27	0.065	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Hexachlorocyclopentadiene	ND		1.8	0.33	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Hexachloroethane	ND		0.27	0.048	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Indeno[1,2,3-cd]pyrene	0.050	J	0.081	0.040	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Isophorone	ND		0.27	0.065	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
N-Nitrosodi-n-propylamine	ND		0.27	0.059	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
N-Nitrosodiphenylamine	ND		0.27	0.065	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Naphthalene	1.5		0.081	0.013	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Nitrobenzene	ND		0.54	0.070	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Pentachlorophenol	ND		0.81	0.31	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Phenanthrene	0.68		0.081	0.012	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Phenol	0.14	J	0.27	0.043	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
Pyrene	0.26		0.081	0.012	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4
3 & 4 Methylphenol	ND		2.2	0.16	mg/Kg	✳	02/22/23 09:34	02/24/23 14:59	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	57		46 - 137	02/22/23 09:34	02/24/23 14:59	4
<i>Phenol-d5 (Surr)</i>	58		26 - 120	02/22/23 09:34	02/24/23 14:59	4
<i>Nitrobenzene-d5 (Surr)</i>	61		25 - 120	02/22/23 09:34	02/24/23 14:59	4
<i>2-Fluorophenol (Surr)</i>	56		20 - 120	02/22/23 09:34	02/24/23 14:59	4
<i>2-Fluorobiphenyl (Surr)</i>	58		34 - 120	02/22/23 09:34	02/24/23 14:59	4
<i>2,4,6-Tribromophenol (Surr)</i>	42		10 - 120	02/22/23 09:34	02/24/23 14:59	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0099	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 12:57	1
Barium	2.7	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 12:57	1
Cadmium	0.0033	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 12:57	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 12:57	1
Lead	0.011	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 12:57	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 12:57	1
Silver	0.00088	J	0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 12:57	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:53	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 73.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	73.8		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	26.2		0.1	0.1	%			02/21/23 14:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.29	0.091	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,1,2,2-Tetrachloroethane	ND		0.29	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.29	0.078	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,1,2-Trichloroethane	ND		0.29	0.066	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,1-Dichloroethane	ND		0.29	0.056	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,1-Dichloroethene	ND		0.29	0.095	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,2,4-Trichlorobenzene	ND		0.29	0.15	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,2-Dibromo-3-Chloropropane	ND		0.58	0.26	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Ethylene Dibromide	ND		0.29	0.092	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,2-Dichlorobenzene	ND		0.29	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,2-Dichloroethane	1.0		0.29	0.055	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,2-Dichloropropane	ND		0.29	0.043	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,3-Dichlorobenzene	ND		0.29	0.054	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
1,4-Dichlorobenzene	ND		0.29	0.064	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
2-Butanone (MEK)	ND		1.2	0.18	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
2-Hexanone	ND		1.2	0.31	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Acetone	1.0 J		1.2	0.28	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Benzene	11		0.29	0.049	mg/Kg	✳	02/21/23 19:38	02/24/23 16:13	1
Dichlorobromomethane	ND		0.29	0.071	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Bromoform	ND		0.29	0.27	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Bromomethane	ND		0.29	0.19	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Carbon disulfide	ND		0.29	0.13	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Carbon tetrachloride	ND		0.29	0.12	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Chlorobenzene	0.089 J		0.29	0.041	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Chloroethane	ND		0.29	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Chloroform	ND		0.29	0.063	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Chloromethane	0.29		0.29	0.077	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
cis-1,2-Dichloroethene	ND		0.29	0.047	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
cis-1,3-Dichloropropene	ND		0.29	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Cyclohexane	ND		0.58	0.19	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Chlorodibromomethane	ND		0.29	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Dichlorodifluoromethane	ND		0.29	0.062	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Ethylbenzene	0.24 J		0.29	0.055	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Isopropylbenzene	ND		0.29	0.044	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Methyl acetate	0.33 J		1.5	0.20	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Methyl tert-butyl ether	ND		0.29	0.043	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Methylcyclohexane	ND		0.58	0.077	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Methylene Chloride	ND		0.58	0.45	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Styrene	ND		0.29	0.061	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Tetrachloroethene	ND		0.29	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Toluene	1.5		0.29	0.28	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
trans-1,2-Dichloroethene	ND		0.29	0.072	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
trans-1,3-Dichloropropene	ND		0.29	0.12	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Trichloroethene	ND		0.29	0.17	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Trichlorofluoromethane	ND		0.29	0.16	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Vinyl chloride	0.18 J		0.29	0.14	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1
Xylenes, Total	0.41 J		0.58	0.11	mg/Kg	✳	02/21/23 19:38	02/23/23 22:40	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/21/23 19:38	02/23/23 22:40	1
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/24/23 16:13	1
Dibromofluoromethane (Surr)	97		41 - 138	02/21/23 19:38	02/23/23 22:40	1
Dibromofluoromethane (Surr)	106		41 - 138	02/21/23 19:38	02/24/23 16:13	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/23/23 22:40	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/24/23 16:13	1
1,2-Dichloroethane-d4 (Surr)	112		58 - 125	02/21/23 19:38	02/23/23 22:40	1
1,2-Dichloroethane-d4 (Surr)	117		58 - 125	02/21/23 19:38	02/24/23 16:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.18		0.062	0.021	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
bis (2-chloroisopropyl) ether	ND		0.12	0.012	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4,5-Trichlorophenol	ND		0.19	0.086	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4,6-Trichlorophenol	ND		0.19	0.079	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4-Dichlorophenol	ND		0.19	0.055	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4-Dimethylphenol	ND		0.19	0.050	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4-Dinitrophenol	ND		0.41	0.18	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,4-Dinitrotoluene	ND		0.25	0.077	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2,6-Dinitrotoluene	ND		0.25	0.070	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Chloronaphthalene	ND		0.062	0.017	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Chlorophenol	ND		0.062	0.012	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Methylnaphthalene	0.52		0.019	0.0024	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Methylphenol	ND		0.25	0.038	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Nitroaniline	ND		0.25	0.050	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
2-Nitrophenol	ND		0.062	0.016	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
3,3'-Dichlorobenzidine	ND		0.12	0.053	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
3-Nitroaniline	ND		0.25	0.061	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4,6-Dinitro-2-methylphenol	ND		0.41	0.099	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Bromophenyl phenyl ether	ND		0.062	0.017	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Chloro-3-methylphenol	ND		0.19	0.056	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Chloroaniline	ND		0.19	0.037	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Chlorophenyl phenyl ether	ND		0.062	0.017	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Nitroaniline	ND		0.25	0.075	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
4-Nitrophenol	ND		0.41	0.12	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Acenaphthene	0.068		0.019	0.0036	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Acenaphthylene	0.022		0.019	0.0050	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Acetophenone	0.69		0.12	0.014	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Anthracene	0.065		0.019	0.0030	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Atrazine	ND		0.25	0.045	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzaldehyde	ND		0.12	0.029	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzo[a]anthracene	0.10		0.019	0.0042	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzo[a]pyrene	0.055		0.019	0.012	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzo[b]fluoranthene	0.11		0.019	0.0081	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzo[g,h,i]perylene	ND		0.019	0.0088	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Benzo[k]fluoranthene	0.027		0.019	0.0086	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Bis(2-chloroethoxy)methane	ND		0.12	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Bis(2-chloroethyl)ether	ND		0.12	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Bis(2-ethylhexyl) phthalate	ND		0.087	0.063	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Butyl benzyl phthalate	ND		0.087	0.027	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.41	0.093	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Carbazole	ND		0.062	0.024	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Chrysene	0.16		0.019	0.0019	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Dibenz(a,h)anthracene	ND		0.019	0.0086	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Dibenzofuran	0.059	J	0.062	0.016	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Diethyl phthalate	ND		0.087	0.038	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Dimethyl phthalate	ND		0.087	0.017	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Di-n-butyl phthalate	ND		0.087	0.063	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Di-n-octyl phthalate	ND		0.087	0.035	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Fluoranthene	0.13		0.019	0.0055	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Fluorene	0.23		0.019	0.0034	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Hexachlorobenzene	ND		0.019	0.0035	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Hexachlorobutadiene	ND		0.062	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Hexachlorocyclopentadiene	ND		0.41	0.077	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Hexachloroethane	ND		0.062	0.011	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Indeno[1,2,3-cd]pyrene	0.015	J	0.019	0.0091	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Isophorone	ND		0.062	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
N-Nitrosodi-n-propylamine	ND		0.062	0.014	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
N-Nitrosodiphenylamine	ND		0.062	0.015	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Naphthalene	1.1		0.019	0.0030	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Nitrobenzene	ND		0.12	0.016	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Pentachlorophenol	ND		0.19	0.072	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Phenanthrene	0.42		0.019	0.0028	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Phenol	0.057	J	0.062	0.0099	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
Pyrene	0.14		0.019	0.0027	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1
3 & 4 Methylphenol	ND		0.50	0.036	mg/Kg	☼	02/22/23 09:34	02/24/23 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	40	S1-	46 - 137	02/22/23 09:34	02/24/23 14:11	1
Phenol-d5 (Surr)	41		26 - 120	02/22/23 09:34	02/24/23 14:11	1
Nitrobenzene-d5 (Surr)	45		25 - 120	02/22/23 09:34	02/24/23 14:11	1
2-Fluorophenol (Surr)	41		20 - 120	02/22/23 09:34	02/24/23 14:11	1
2-Fluorobiphenyl (Surr)	41		34 - 120	02/22/23 09:34	02/24/23 14:11	1
2,4,6-Tribromophenol (Surr)	32		10 - 120	02/22/23 09:34	02/24/23 14:11	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 13:02	1
Barium	2.6	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 13:02	1
Cadmium	0.0017	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 13:02	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 13:02	1
Lead	0.0094	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 13:02	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 13:02	1
Silver	0.0011	J	0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 13:02	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:55	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.8		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	19.2		0.1	0.1	%			02/21/23 14:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.32	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,1,2,2-Tetrachloroethane	ND		0.32	0.19	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	0.086	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,1,2-Trichloroethane	ND		0.32	0.073	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,1-Dichloroethane	ND		0.32	0.061	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,1-Dichloroethene	ND		0.32	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,2,4-Trichlorobenzene	ND		0.32	0.17	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,2-Dibromo-3-Chloropropane	ND		0.64	0.28	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Ethylene Dibromide	ND		0.32	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,2-Dichlorobenzene	ND		0.32	0.15	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,2-Dichloroethane	ND		0.32	0.060	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,2-Dichloropropane	ND		0.32	0.047	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,3-Dichlorobenzene	ND		0.32	0.059	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
1,4-Dichlorobenzene	ND		0.32	0.070	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
2-Butanone (MEK)	ND		1.3	0.20	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
2-Hexanone	ND		1.3	0.34	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.30	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Acetone	0.42	J	1.3	0.31	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Benzene	53		3.2	0.54	mg/Kg	✱	02/21/23 19:38	02/23/23 23:05	10
Dichlorobromomethane	ND		0.32	0.078	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Bromoform	ND		0.32	0.29	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Bromomethane	ND		0.32	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Carbon disulfide	ND		0.32	0.14	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Carbon tetrachloride	ND		0.32	0.13	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Chlorobenzene	0.096	J	0.32	0.045	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Chloroethane	ND		0.32	0.19	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Chloroform	ND		0.32	0.069	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Chloromethane	0.38		0.32	0.084	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
cis-1,2-Dichloroethene	ND		0.32	0.051	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
cis-1,3-Dichloropropene	ND		0.32	0.16	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Cyclohexane	ND		0.64	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Chlorodibromomethane	ND		0.32	0.15	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Dichlorodifluoromethane	ND		0.32	0.068	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Ethylbenzene	0.32		0.32	0.060	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Isopropylbenzene	0.056	J	0.32	0.049	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Methyl acetate	0.49	J	1.6	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Methyl tert-butyl ether	ND		0.32	0.047	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Methylcyclohexane	0.096	J	0.64	0.084	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Methylene Chloride	ND		0.64	0.49	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Styrene	ND		0.32	0.066	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Tetrachloroethene	ND		0.32	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Toluene	2.0		0.32	0.31	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
trans-1,2-Dichloroethene	ND		0.32	0.079	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
trans-1,3-Dichloropropene	ND		0.32	0.13	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Trichloroethene	ND		0.32	0.18	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Trichlorofluoromethane	ND		0.32	0.18	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Vinyl chloride	ND		0.32	0.16	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1
Xylenes, Total	0.47	J	0.64	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 16:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/23/23 23:05	10
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/24/23 16:39	1
Dibromofluoromethane (Surr)	100		41 - 138	02/21/23 19:38	02/23/23 23:05	10
Dibromofluoromethane (Surr)	96		41 - 138	02/21/23 19:38	02/24/23 16:39	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/23/23 23:05	10
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/24/23 16:39	1
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/21/23 19:38	02/23/23 23:05	10
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/21/23 19:38	02/24/23 16:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.52	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
bis (2-chloroisopropyl) ether	ND		3.1	0.31	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4,5-Trichlorophenol	ND		4.6	2.1	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4,6-Trichlorophenol	ND		4.6	2.0	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4-Dichlorophenol	ND		4.6	1.3	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4-Dimethylphenol	ND		4.6	1.2	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4-Dinitrophenol	ND		10	4.4	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,4-Dinitrotoluene	ND		6.1	1.9	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2,6-Dinitrotoluene	ND		6.1	1.7	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Chloronaphthalene	ND		1.5	0.43	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Chlorophenol	ND		1.5	0.31	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Methylnaphthalene	0.61		0.46	0.060	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Methylphenol	ND		6.1	0.95	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Nitroaniline	ND		6.1	1.2	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
2-Nitrophenol	ND		1.5	0.40	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
3,3'-Dichlorobenzidine	ND		3.1	1.3	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
3-Nitroaniline	ND		6.1	1.5	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Bromophenyl phenyl ether	ND		1.5	0.43	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Chloro-3-methylphenol	ND		4.6	1.4	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Chloroaniline	ND		4.6	0.92	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Chlorophenyl phenyl ether	ND		1.5	0.43	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Nitroaniline	ND		6.1	1.8	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
4-Nitrophenol	ND		10	2.9	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Acenaphthene	ND		0.46	0.088	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Acenaphthylene	ND		0.46	0.12	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Acetophenone	1.8 J		3.1	0.34	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Anthracene	ND		0.46	0.074	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Atrazine	ND		6.1	1.1	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzaldehyde	ND		3.1	0.70	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzo[a]anthracene	ND		0.46	0.10	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzo[a]pyrene	ND		0.46	0.29	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzo[b]fluoranthene	ND		0.46	0.20	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzo[g,h,i]perylene	ND		0.46	0.22	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Benzo[k]fluoranthene	ND		0.46	0.21	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Bis(2-chloroethoxy)methane	ND		3.1	0.37	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Bis(2-chloroethyl)ether	ND		3.1	0.37	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Bis(2-ethylhexyl) phthalate	ND		2.1	1.6	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4
Butyl benzyl phthalate	ND		2.1	0.67	mg/Kg	☼	02/25/23 15:12	02/28/23 12:44	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.3	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Carbazole	ND		1.5	0.58	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Chrysene	0.22	J	0.46	0.046	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Dibenz(a,h)anthracene	ND		0.46	0.21	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Dibenzofuran	ND		1.5	0.40	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Diethyl phthalate	ND		2.1	0.95	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Dimethyl phthalate	ND		2.1	0.43	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Di-n-octyl phthalate	ND		2.1	0.86	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Fluoranthene	0.16	J	0.46	0.14	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Fluorene	0.24	J	0.46	0.084	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Hexachlorobenzene	ND		0.46	0.087	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Hexachlorobutadiene	ND		1.5	0.37	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Hexachlorocyclopentadiene	ND		10	1.9	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Hexachloroethane	ND		1.5	0.28	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Indeno[1,2,3-cd]pyrene	ND		0.46	0.23	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Isophorone	ND		1.5	0.37	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
N-Nitrosodi-n-propylamine	ND		1.5	0.34	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
N-Nitrosodiphenylamine	ND		1.5	0.37	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Naphthalene	1.6		0.46	0.074	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Nitrobenzene	ND		3.1	0.40	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Pentachlorophenol	ND		4.6	1.8	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Phenanthrene	0.49		0.46	0.068	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Phenol	ND		1.5	0.25	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
Pyrene	0.16	J	0.46	0.066	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4
3 & 4 Methylphenol	ND		12	0.89	mg/Kg	✳	02/25/23 15:12	02/28/23 12:44	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	65		46 - 137	02/25/23 15:12	02/28/23 12:44	4
Phenol-d5 (Surr)	48		26 - 120	02/25/23 15:12	02/28/23 12:44	4
Nitrobenzene-d5 (Surr)	45		25 - 120	02/25/23 15:12	02/28/23 12:44	4
2-Fluorophenol (Surr)	47		20 - 120	02/25/23 15:12	02/28/23 12:44	4
2-Fluorobiphenyl (Surr)	59		34 - 120	02/25/23 15:12	02/28/23 12:44	4
2,4,6-Tribromophenol (Surr)	65		10 - 120	02/25/23 15:12	02/28/23 12:44	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.014	J B	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 13:06	1
Barium	2.1	B	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 13:06	1
Cadmium	0.00093	J	0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 13:06	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 13:06	1
Lead	0.0077	J	0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 13:06	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 13:06	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 13:06	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 16:42	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.9		0.1	0.1	%			02/21/23 14:25	1
Percent Moisture (EPA Moisture)	22.1		0.1	0.1	%			02/21/23 14:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 17:46	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 17:46	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 17:46	1
Benzene	0.35		0.025	0.00042	mg/L			02/23/23 17:46	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 17:46	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 17:46	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 17:46	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 17:46	1
Vinyl chloride	0.087		0.025	0.00045	mg/L			02/23/23 17:46	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120					02/23/23 17:46	1
Dibromofluoromethane (Surr)	96		71 - 121					02/23/23 17:46	1
4-Bromofluorobenzene (Surr)	115		80 - 120					02/23/23 17:46	1
1,2-Dichloroethane-d4 (Surr)	93		76 - 120					02/23/23 17:46	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 18:34	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 18:34	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 18:34	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 18:34	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 18:34	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 18:34	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 18:34	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 18:34	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 18:34	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 18:34	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 18:34	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 18:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137				02/23/23 12:44	02/24/23 18:34	1
Phenol-d5 (Surr)	57		26 - 120				02/23/23 12:44	02/24/23 18:34	1
Nitrobenzene-d5 (Surr)	64		24 - 120				02/23/23 12:44	02/24/23 18:34	1
2-Fluorophenol (Surr)	64		19 - 120				02/23/23 12:44	02/24/23 18:34	1
2-Fluorobiphenyl (Surr)	85		33 - 120				02/23/23 12:44	02/24/23 18:34	1
2,4,6-Tribromophenol (Surr)	90		10 - 120				02/23/23 12:44	02/24/23 18:34	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 11:30	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 11:30	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 11:30	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 11:30	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 11:30	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 11:30	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 11:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	02/23/23 12:51	02/24/23 11:30	1
DCB Decachlorobiphenyl	75		10 - 145	02/23/23 12:51	02/24/23 11:30	1
Tetrachloro-m-xylene	61		10 - 123	02/23/23 12:51	02/24/23 11:30	1
Tetrachloro-m-xylene	70		10 - 123	02/23/23 12:51	02/24/23 11:30	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 06:15	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 06:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	62		26 - 136	02/24/23 19:47	02/27/23 06:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.9		0.1	0.1	%			02/21/23 11:57	1
Percent Moisture (EPA Moisture)	22.1		0.1	0.1	%			02/21/23 11:57	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		67	33	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1221	ND		67	40	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1232	ND		67	28	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1242	ND		67	25	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1248	ND		67	23	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1254	ND		67	28	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1260	ND		67	28	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1262	ND		67	29	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Aroclor-1268	ND		67	21	ug/Kg	✳	02/22/23 08:41	02/23/23 10:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	69		10 - 149				02/22/23 08:41	02/23/23 10:43	1
DCB Decachlorobiphenyl	75	p	10 - 174				02/22/23 08:41	02/23/23 10:43	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.70	0.23	ng/g	✳	02/24/23 17:55	02/27/23 12:12	1
Perfluorooctanesulfonic acid	0.25	J	0.70	0.23	ng/g	✳	02/24/23 17:55	02/27/23 12:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	74		26 - 159				02/24/23 17:55	02/27/23 12:12	1
13C8 PFOS	83		41 - 154				02/24/23 17:55	02/27/23 12:12	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 66.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.45	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,1,2,2-Tetrachloroethane	ND		0.45	0.27	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.45	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,1,2-Trichloroethane	ND		0.45	0.10	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,1-Dichloroethane	ND		0.45	0.086	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,1-Dichloroethene	ND		0.45	0.15	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,2,4-Trichlorobenzene	ND		0.45	0.24	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,2-Dibromo-3-Chloropropane	ND		0.90	0.40	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Ethylene Dibromide	ND		0.45	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,2-Dichlorobenzene	ND		0.45	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,2-Dichloroethane	ND		0.45	0.084	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,2-Dichloropropane	ND		0.45	0.066	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,3-Dichlorobenzene	ND		0.45	0.082	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
1,4-Dichlorobenzene	ND		0.45	0.099	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
2-Butanone (MEK)	ND		1.8	0.28	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
2-Hexanone	ND		1.8	0.47	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
4-Methyl-2-pentanone (MIBK)	ND		1.8	0.43	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Acetone	0.66	J	1.8	0.44	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Benzene	ND		0.45	0.075	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Dichlorobromomethane	ND		0.45	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Bromoform	ND		0.45	0.41	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Bromomethane	ND		0.45	0.30	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Carbon disulfide	ND		0.45	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Carbon tetrachloride	ND		0.45	0.18	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Chlorobenzene	ND		0.45	0.063	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Chloroethane	ND		0.45	0.27	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Chloroform	ND		0.45	0.097	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Chloromethane	ND		0.45	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
cis-1,2-Dichloroethene	ND		0.45	0.072	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
cis-1,3-Dichloropropene	ND		0.45	0.22	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Cyclohexane	ND		0.90	0.29	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Chlorodibromomethane	ND		0.45	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Dichlorodifluoromethane	ND		0.45	0.095	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Ethylbenzene	ND		0.45	0.084	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Isopropylbenzene	ND		0.45	0.068	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Methyl acetate	ND		2.2	0.30	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Methyl tert-butyl ether	ND		0.45	0.066	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Methylcyclohexane	0.31	J	0.90	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Methylene Chloride	ND		0.90	0.69	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Styrene	ND		0.45	0.093	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Tetrachloroethene	ND		0.45	0.17	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Toluene	ND		0.45	0.43	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
trans-1,2-Dichloroethene	ND		0.45	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
trans-1,3-Dichloropropene	ND		0.45	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Trichloroethene	ND		0.45	0.26	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Trichlorofluoromethane	ND		0.45	0.25	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Vinyl chloride	ND		0.45	0.22	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1
Xylenes, Total	ND		0.90	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 23:30	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 66.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/23/23 23:30	1
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/24/23 17:04	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/23/23 23:30	1
Dibromofluoromethane (Surr)	104		41 - 138	02/21/23 19:38	02/24/23 17:04	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/23/23 23:30	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/21/23 19:38	02/24/23 17:04	1
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/21/23 19:38	02/23/23 23:30	1
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/21/23 19:38	02/24/23 17:04	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.5	0.51	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
bis (2-chloroisopropyl) ether	ND	F1	3.0	0.30	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4,5-Trichlorophenol	ND		4.5	2.1	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4,6-Trichlorophenol	ND		4.5	1.9	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4-Dichlorophenol	ND		4.5	1.3	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4-Dimethylphenol	ND		4.5	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4-Dinitrophenol	ND		10	4.3	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,4-Dinitrotoluene	ND		6.0	1.9	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2,6-Dinitrotoluene	ND		6.0	1.7	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Chloronaphthalene	ND		1.5	0.42	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Chlorophenol	ND		1.5	0.30	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Methylnaphthalene	1.2	F1 F2	0.45	0.059	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Methylphenol	ND		6.0	0.94	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Nitroaniline	ND		6.0	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
2-Nitrophenol	ND		1.5	0.39	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
3,3'-Dichlorobenzidine	ND	F1	3.0	1.3	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
3-Nitroaniline	ND		6.0	1.5	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4,6-Dinitro-2-methylphenol	ND		10	2.4	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Bromophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Chloro-3-methylphenol	ND		4.5	1.4	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Chloroaniline	ND	F1	4.5	0.91	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Chlorophenyl phenyl ether	ND		1.5	0.42	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Nitroaniline	ND		6.0	1.8	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
4-Nitrophenol	ND		10	2.8	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Acenaphthene	ND		0.45	0.086	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Acenaphthylene	ND		0.45	0.12	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Acetophenone	ND		3.0	0.33	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Anthracene	0.44	J	0.45	0.073	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Atrazine	ND		6.0	1.1	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzaldehyde	ND		3.0	0.69	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzo[a]anthracene	1.8		0.45	0.10	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzo[a]pyrene	1.4		0.45	0.28	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzo[b]fluoranthene	2.2	F1	0.45	0.20	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzo[g,h,i]perylene	0.61		0.45	0.21	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Benzo[k]fluoranthene	0.83		0.45	0.21	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Bis(2-chloroethoxy)methane	ND		3.0	0.36	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Bis(2-chloroethyl)ether	ND		3.0	0.36	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Bis(2-ethylhexyl) phthalate	ND		2.1	1.5	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20
Butyl benzyl phthalate	ND		2.1	0.66	mg/Kg	☼	02/23/23 08:32	02/25/23 13:54	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 66.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.3	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Carbazole	ND		1.5	0.57	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Chrysene	2.4	F1	0.45	0.045	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Dibenz(a,h)anthracene	ND		0.45	0.21	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Dibenzofuran	0.53	J F1	1.5	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Diethyl phthalate	ND	F1	2.1	0.94	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Dimethyl phthalate	ND		2.1	0.42	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Di-n-butyl phthalate	ND		2.1	1.5	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Di-n-octyl phthalate	ND		2.1	0.85	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Fluoranthene	4.4		0.45	0.13	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Fluorene	0.12	J	0.45	0.083	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Hexachlorobenzene	ND		0.45	0.086	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Hexachlorobutadiene	ND		1.5	0.36	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Hexachlorocyclopentadiene	ND		10	1.9	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Hexachloroethane	ND		1.5	0.27	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Indeno[1,2,3-cd]pyrene	0.55		0.45	0.22	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Isophorone	ND		1.5	0.36	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
N-Nitrosodi-n-propylamine	ND		1.5	0.33	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
N-Nitrosodiphenylamine	ND		1.5	0.36	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Naphthalene	0.75	F1 F2	0.45	0.073	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Nitrobenzene	ND		3.0	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Pentachlorophenol	ND	F1	4.5	1.8	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Phenanthrene	3.4	F1	0.45	0.067	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Phenol	ND		1.5	0.24	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
Pyrene	4.1		0.45	0.065	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20
3 & 4 Methylphenol	ND		12	0.88	mg/Kg	☆	02/23/23 08:32	02/25/23 13:54	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	108		46 - 137	02/23/23 08:32	02/25/23 13:54	20
Phenol-d5 (Surr)	107		26 - 120	02/23/23 08:32	02/25/23 13:54	20
Nitrobenzene-d5 (Surr)	78		25 - 120	02/23/23 08:32	02/25/23 13:54	20
2-Fluorophenol (Surr)	78		20 - 120	02/23/23 08:32	02/25/23 13:54	20
2-Fluorobiphenyl (Surr)	97		34 - 120	02/23/23 08:32	02/25/23 13:54	20
2,4,6-Tribromophenol (Surr)	118		10 - 120	02/23/23 08:32	02/25/23 13:54	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.020	mg/L		02/23/23 14:00	02/24/23 10:50	5
Barium	0.62	J B	2.5	0.0066	mg/L		02/23/23 14:00	02/24/23 10:50	5
Cadmium	0.0047	J	0.25	0.0010	mg/L		02/23/23 14:00	02/24/23 10:50	5
Chromium	ND		0.25	0.020	mg/L		02/23/23 14:00	02/24/23 10:50	5
Lead	ND		0.25	0.014	mg/L		02/23/23 14:00	02/24/23 10:50	5
Selenium	ND		0.25	0.030	mg/L		02/23/23 14:00	02/24/23 10:50	5
Silver	ND		0.25	0.0031	mg/L		02/23/23 14:00	02/24/23 10:50	5

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 09:45	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 66.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	66.3		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	33.7		0.1	0.1	%			02/23/23 10:54	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 63.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.51	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,1,2,2-Tetrachloroethane	ND		0.51	0.31	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.51	0.14	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,1,2-Trichloroethane	ND		0.51	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,1-Dichloroethane	ND		0.51	0.098	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,1-Dichloroethene	ND		0.51	0.17	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,2,4-Trichlorobenzene	ND		0.51	0.27	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.45	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Ethylene Dibromide	ND		0.51	0.16	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,2-Dichlorobenzene	ND		0.51	0.24	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,2-Dichloroethane	ND		0.51	0.096	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,2-Dichloropropane	ND		0.51	0.075	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,3-Dichlorobenzene	ND		0.51	0.094	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
1,4-Dichlorobenzene	ND		0.51	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
2-Butanone (MEK)	ND		2.0	0.32	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
2-Hexanone	ND		2.0	0.54	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
4-Methyl-2-pentanone (MIBK)	ND		2.0	0.49	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Acetone	0.58	J	2.0	0.50	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Benzene	ND		0.51	0.086	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Dichlorobromomethane	ND		0.51	0.12	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Bromoform	ND		0.51	0.46	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Bromomethane	ND		0.51	0.34	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Carbon disulfide	ND		0.51	0.22	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Carbon tetrachloride	ND		0.51	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Chlorobenzene	ND		0.51	0.071	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Chloroethane	ND		0.51	0.31	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Chloroform	ND		0.51	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Chloromethane	ND		0.51	0.13	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
cis-1,2-Dichloroethene	ND		0.51	0.082	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
cis-1,3-Dichloropropene	ND		0.51	0.25	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Cyclohexane	ND		1.0	0.33	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Chlorodibromomethane	ND		0.51	0.24	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Dichlorodifluoromethane	ND		0.51	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Ethylbenzene	ND		0.51	0.096	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Isopropylbenzene	ND		0.51	0.077	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Methyl acetate	0.38	J	2.5	0.34	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Methyl tert-butyl ether	ND		0.51	0.075	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Methylcyclohexane	0.25	J	1.0	0.13	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Methylene Chloride	ND		1.0	0.78	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Styrene	ND		0.51	0.11	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Tetrachloroethene	ND		0.51	0.20	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Toluene	ND		0.51	0.49	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
trans-1,2-Dichloroethene	ND		0.51	0.13	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
trans-1,3-Dichloropropene	ND		0.51	0.21	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Trichloroethene	ND		0.51	0.29	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Trichlorofluoromethane	ND		0.51	0.28	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Vinyl chloride	ND		0.51	0.25	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1
Xylenes, Total	0.24	J	1.0	0.19	mg/Kg	✱	02/21/23 19:38	02/23/23 23:55	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 63.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 19:38	02/23/23 23:55	1
Toluene-d8 (Surr)	107		56 - 125	02/21/23 19:38	02/24/23 17:29	1
Dibromofluoromethane (Surr)	98		41 - 138	02/21/23 19:38	02/23/23 23:55	1
Dibromofluoromethane (Surr)	101		41 - 138	02/21/23 19:38	02/24/23 17:29	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/23/23 23:55	1
4-Bromofluorobenzene (Surr)	108		41 - 143	02/21/23 19:38	02/24/23 17:29	1
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/21/23 19:38	02/23/23 23:55	1
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/21/23 19:38	02/24/23 17:29	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.54	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
bis (2-chloroisopropyl) ether	ND		3.2	0.32	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4,5-Trichlorophenol	ND		4.8	2.2	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4,6-Trichlorophenol	ND		4.8	2.0	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4-Dichlorophenol	ND		4.8	1.4	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4-Dimethylphenol	ND		4.8	1.3	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4-Dinitrophenol	ND		10	4.5	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,4-Dinitrotoluene	ND		6.4	2.0	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2,6-Dinitrotoluene	ND		6.4	1.8	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Chlorophenol	ND		1.6	0.32	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Methylnaphthalene	5.3		0.48	0.062	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Methylphenol	ND		6.4	0.99	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Nitroaniline	ND		6.4	1.3	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
2-Nitrophenol	ND		1.6	0.41	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
3,3'-Dichlorobenzidine	ND		3.2	1.4	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
3-Nitroaniline	ND		6.4	1.6	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Chloro-3-methylphenol	ND		4.8	1.4	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Chloroaniline	ND		4.8	0.95	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Nitroaniline	ND		6.4	1.9	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
4-Nitrophenol	ND		10	3.0	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Acenaphthene	0.18	J	0.48	0.091	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Acenaphthylene	ND		0.48	0.13	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Acetophenone	ND		3.2	0.35	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Anthracene	0.30	J	0.48	0.077	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Atrazine	ND		6.4	1.1	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzaldehyde	ND		3.2	0.73	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzo[a]anthracene	1.7		0.48	0.11	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzo[a]pyrene	1.6		0.48	0.30	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzo[b]fluoranthene	2.8		0.48	0.21	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzo[g,h,i]perylene	0.59		0.48	0.23	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Benzo[k]fluoranthene	0.86		0.48	0.22	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Bis(2-chloroethoxy)methane	ND		3.2	0.38	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Bis(2-chloroethyl)ether	ND		3.2	0.38	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20
Butyl benzyl phthalate	ND		2.2	0.70	mg/Kg	☼	02/23/23 08:32	02/25/23 15:37	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 63.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.4	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Carbazole	ND		1.6	0.60	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Chrysene	2.0		0.48	0.047	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Dibenz(a,h)anthracene	ND		0.48	0.22	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Dibenzofuran	1.5 J		1.6	0.41	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Diethyl phthalate	ND		2.2	0.99	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Dimethyl phthalate	ND		2.2	0.44	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Di-n-octyl phthalate	ND		2.2	0.89	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Fluoranthene	2.8		0.48	0.14	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Fluorene	0.17 J		0.48	0.087	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Hexachlorobenzene	ND		0.48	0.091	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Hexachlorobutadiene	ND		1.6	0.38	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Hexachlorocyclopentadiene	ND		10	2.0	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Hexachloroethane	ND		1.6	0.29	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Indeno[1,2,3-cd]pyrene	0.53		0.48	0.23	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Isophorone	ND		1.6	0.38	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
N-Nitrosodi-n-propylamine	ND		1.6	0.35	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
N-Nitrosodiphenylamine	ND		1.6	0.38	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Naphthalene	3.5		0.48	0.077	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Nitrobenzene	ND		3.2	0.41	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Pentachlorophenol	ND		4.8	1.8	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Phenanthrene	2.9		0.48	0.071	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Phenol	ND		1.6	0.25	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
Pyrene	2.7		0.48	0.068	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20
3 & 4 Methylphenol	ND		13	0.92	mg/Kg	✳	02/23/23 08:32	02/25/23 15:37	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	111		46 - 137	02/23/23 08:32	02/25/23 15:37	20
Phenol-d5 (Surr)	100		26 - 120	02/23/23 08:32	02/25/23 15:37	20
Nitrobenzene-d5 (Surr)	83		25 - 120	02/23/23 08:32	02/25/23 15:37	20
2-Fluorophenol (Surr)	82		20 - 120	02/23/23 08:32	02/25/23 15:37	20
2-Fluorobiphenyl (Surr)	95		34 - 120	02/23/23 08:32	02/25/23 15:37	20
2,4,6-Tribromophenol (Surr)	125	S1+	10 - 120	02/23/23 08:32	02/25/23 15:37	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J	0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:16	1
Barium	0.51	B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:16	1
Cadmium	0.0040	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:16	1
Chromium	0.0058	J	0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:16	1
Lead	0.033	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:16	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:16	1
Silver	0.0014	J	0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:16	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 09:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 63.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	63.8		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	36.2		0.1	0.1	%			02/23/23 10:54	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Date Collected: 02/20/23 18:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 64.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.49	0.15	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,1,2,2-Tetrachloroethane	ND		0.49	0.29	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.49	0.13	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,1,2-Trichloroethane	ND		0.49	0.11	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,1-Dichloroethane	ND		0.49	0.094	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,1-Dichloroethene	ND		0.49	0.16	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,2,4-Trichlorobenzene	ND		0.49	0.26	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,2-Dibromo-3-Chloropropane	ND		0.97	0.43	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Ethylene Dibromide	ND		0.49	0.15	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,2-Dichlorobenzene	ND		0.49	0.23	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,2-Dichloroethane	ND		0.49	0.092	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,2-Dichloropropane	ND		0.49	0.072	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,3-Dichlorobenzene	ND		0.49	0.090	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
1,4-Dichlorobenzene	ND		0.49	0.11	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
2-Butanone (MEK)	ND		1.9	0.31	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
2-Hexanone	ND		1.9	0.51	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
4-Methyl-2-pentanone (MIBK)	ND		1.9	0.46	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Acetone	0.71	J	1.9	0.48	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Benzene	ND		0.49	0.082	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Dichlorobromomethane	ND		0.49	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Bromoform	ND		0.49	0.44	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Bromomethane	ND		0.49	0.32	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Carbon disulfide	ND		0.49	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Carbon tetrachloride	ND		0.49	0.20	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Chlorobenzene	ND		0.49	0.068	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Chloroethane	ND		0.49	0.29	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Chloroform	ND		0.49	0.11	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Chloromethane	ND		0.49	0.13	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
cis-1,2-Dichloroethene	ND		0.49	0.078	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
cis-1,3-Dichloropropene	ND		0.49	0.24	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Cyclohexane	ND		0.97	0.32	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Chlorodibromomethane	ND		0.49	0.23	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Dichlorodifluoromethane	ND		0.49	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Ethylbenzene	ND		0.49	0.092	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Isopropylbenzene	ND		0.49	0.074	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Methyl acetate	ND		2.4	0.33	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Methyl tert-butyl ether	ND		0.49	0.072	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Methylcyclohexane	0.45	J	0.97	0.13	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Methylene Chloride	ND		0.97	0.75	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Styrene	ND		0.49	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Tetrachloroethene	ND		0.49	0.19	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Toluene	ND		0.49	0.47	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
trans-1,2-Dichloroethene	ND		0.49	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
trans-1,3-Dichloropropene	ND		0.49	0.20	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Trichloroethene	ND		0.49	0.28	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Trichlorofluoromethane	ND		0.49	0.27	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Vinyl chloride	ND		0.49	0.24	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1
Xylenes, Total	0.24	J	0.97	0.18	mg/Kg	✱	02/21/23 19:38	02/24/23 00:21	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Date Collected: 02/20/23 18:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 64.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 19:38	02/24/23 00:21	1
Dibromofluoromethane (Surr)	96		41 - 138	02/21/23 19:38	02/24/23 00:21	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 19:38	02/24/23 00:21	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125	02/21/23 19:38	02/24/23 00:21	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.72		0.38	0.13	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
bis (2-chloroisopropyl) ether	ND		0.77	0.077	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4,5-Trichlorophenol	ND		1.2	0.53	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4,6-Trichlorophenol	ND		1.2	0.49	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4-Dichlorophenol	ND		1.2	0.34	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4-Dimethylphenol	ND		1.2	0.31	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4-Dinitrophenol	ND		2.5	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,4-Dinitrotoluene	ND		1.5	0.48	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2,6-Dinitrotoluene	ND		1.5	0.43	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Chloronaphthalene	ND		0.38	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Chlorophenol	ND		0.38	0.077	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Methylnaphthalene	6.2		0.12	0.015	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Methylphenol	ND		1.5	0.24	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Nitroaniline	ND		1.5	0.31	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
2-Nitrophenol	ND		0.38	0.10	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
3,3'-Dichlorobenzidine	ND		0.77	0.33	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
3-Nitroaniline	ND		1.5	0.38	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4,6-Dinitro-2-methylphenol	ND		2.5	0.61	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Bromophenyl phenyl ether	ND		0.38	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Chloro-3-methylphenol	ND		1.2	0.35	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Chloroaniline	ND		1.2	0.23	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Chlorophenyl phenyl ether	ND		0.38	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Nitroaniline	ND		1.5	0.46	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
4-Nitrophenol	ND		2.5	0.72	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Acenaphthene	0.32		0.12	0.022	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Acenaphthylene	0.17		0.12	0.031	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Acetophenone	ND		0.77	0.084	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Anthracene	0.41		0.12	0.018	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Atrazine	ND		1.5	0.28	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzaldehyde	0.21 J		0.77	0.18	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzo[a]anthracene	1.8		0.12	0.026	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzo[a]pyrene	1.9		0.12	0.072	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzo[b]fluoranthene	2.9		0.12	0.050	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzo[g,h,i]perylene	0.46		0.12	0.055	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Benzo[k]fluoranthene	1.2		0.12	0.053	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Bis(2-chloroethoxy)methane	ND		0.77	0.092	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Bis(2-chloroethyl)ether	ND		0.77	0.092	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Bis(2-ethylhexyl) phthalate	3.1		0.54	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Butyl benzyl phthalate	ND		0.54	0.17	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Caprolactam	ND		2.5	0.58	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Carbazole	0.45		0.38	0.15	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Chrysene	2.2		0.12	0.011	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5
Dibenz(a,h)anthracene	0.12		0.12	0.053	mg/Kg	☆	02/23/23 08:32	02/25/23 17:47	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Date Collected: 02/20/23 18:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 64.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	2.4		0.38	0.10	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Diethyl phthalate	ND		0.54	0.24	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Dimethyl phthalate	ND		0.54	0.11	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Di-n-butyl phthalate	ND		0.54	0.39	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Di-n-octyl phthalate	ND		0.54	0.21	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Fluoranthene	3.3		0.12	0.034	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Fluorene	0.31		0.12	0.021	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Hexachlorobenzene	ND		0.12	0.022	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Hexachlorobutadiene	ND		0.38	0.092	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Hexachlorocyclopentadiene	ND		2.5	0.48	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Hexachloroethane	ND		0.38	0.069	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Indeno[1,2,3-cd]pyrene	0.38		0.12	0.056	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Isophorone	ND		0.38	0.092	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
N-Nitrosodi-n-propylamine	ND		0.38	0.084	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
N-Nitrosodiphenylamine	ND		0.38	0.092	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Naphthalene	4.1		0.12	0.018	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Nitrobenzene	ND		0.77	0.10	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Pentachlorophenol	ND		1.2	0.45	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Phenanthrene	5.6		0.12	0.017	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Phenol	ND		0.38	0.061	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
Pyrene	3.1		0.12	0.016	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5
3 & 4 Methylphenol	ND		3.1	0.22	mg/Kg	✳	02/23/23 08:32	02/25/23 17:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	97		46 - 137	02/23/23 08:32	02/25/23 17:47	5
Phenol-d5 (Surr)	88		26 - 120	02/23/23 08:32	02/25/23 17:47	5
Nitrobenzene-d5 (Surr)	78		25 - 120	02/23/23 08:32	02/25/23 17:47	5
2-Fluorophenol (Surr)	66		20 - 120	02/23/23 08:32	02/25/23 17:47	5
2-Fluorobiphenyl (Surr)	96		34 - 120	02/23/23 08:32	02/25/23 17:47	5
2,4,6-Tribromophenol (Surr)	99		10 - 120	02/23/23 08:32	02/25/23 17:47	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J	0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:21	1
Barium	0.37	J B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:21	1
Cadmium	0.0032	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:21	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:21	1
Lead	0.24		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:21	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:21	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:21	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 09:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	64.4		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	35.6		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Date Collected: 02/20/23 18:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 69.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.44	0.14	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,1,2,2-Tetrachloroethane	ND		0.44	0.27	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.44	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,1,2-Trichloroethane	ND		0.44	0.10	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,1-Dichloroethane	ND		0.44	0.085	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,1-Dichloroethene	ND		0.44	0.15	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,2,4-Trichlorobenzene	ND		0.44	0.24	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,2-Dibromo-3-Chloropropane	ND		0.89	0.39	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Ethylene Dibromide	ND		0.44	0.14	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,2-Dichlorobenzene	ND		0.44	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,2-Dichloroethane	ND		0.44	0.083	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,2-Dichloropropane	ND		0.44	0.065	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,3-Dichlorobenzene	ND		0.44	0.081	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
1,4-Dichlorobenzene	ND		0.44	0.097	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
2-Butanone (MEK)	ND		1.8	0.28	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
2-Hexanone	ND		1.8	0.47	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
4-Methyl-2-pentanone (MIBK)	ND		1.8	0.42	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Acetone	0.74	J	1.8	0.43	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Benzene	ND		0.44	0.074	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Dichlorobromomethane	ND		0.44	0.11	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Bromoform	ND		0.44	0.40	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Bromomethane	ND		0.44	0.29	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Carbon disulfide	ND		0.44	0.19	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Carbon tetrachloride	ND		0.44	0.18	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Chlorobenzene	ND		0.44	0.062	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Chloroethane	ND		0.44	0.27	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Chloroform	ND		0.44	0.096	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Chloromethane	ND		0.44	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
cis-1,2-Dichloroethene	ND		0.44	0.071	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
cis-1,3-Dichloropropene	ND		0.44	0.22	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Cyclohexane	ND		0.89	0.29	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Chlorodibromomethane	ND		0.44	0.21	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Dichlorodifluoromethane	ND		0.44	0.094	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Ethylbenzene	ND		0.44	0.083	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Isopropylbenzene	ND		0.44	0.067	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Methyl acetate	ND		2.2	0.30	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Methyl tert-butyl ether	ND		0.44	0.065	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Methylcyclohexane	0.20	J	0.89	0.12	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Methylene Chloride	ND		0.89	0.68	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Styrene	ND		0.44	0.092	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Tetrachloroethene	ND		0.44	0.17	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Toluene	ND		0.44	0.42	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
trans-1,2-Dichloroethene	ND		0.44	0.11	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
trans-1,3-Dichloropropene	ND		0.44	0.19	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Trichloroethene	ND		0.44	0.25	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Trichlorofluoromethane	ND		0.44	0.24	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Vinyl chloride	0.23	J	0.44	0.22	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1
Xylenes, Total	ND		0.89	0.16	mg/Kg	✱	02/21/23 19:38	02/24/23 00:46	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Date Collected: 02/20/23 18:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 69.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/21/23 19:38	02/24/23 00:46	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/24/23 00:46	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/24/23 00:46	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125	02/21/23 19:38	02/24/23 00:46	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.4	0.48	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
bis (2-chloroisopropyl) ether	ND		2.8	0.28	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4,5-Trichlorophenol	ND		4.2	1.9	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4,6-Trichlorophenol	ND		4.2	1.8	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4-Dichlorophenol	ND		4.2	1.2	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4-Dimethylphenol	ND		4.2	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4-Dinitrophenol	ND		9.3	4.0	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,4-Dinitrotoluene	ND		5.6	1.7	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2,6-Dinitrotoluene	ND		5.6	1.6	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Chloronaphthalene	ND		1.4	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Chlorophenol	ND		1.4	0.28	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Methylnaphthalene	3.8		0.42	0.055	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Methylphenol	ND		5.6	0.87	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Nitroaniline	ND		5.6	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
2-Nitrophenol	ND		1.4	0.37	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
3,3'-Dichlorobenzidine	ND		2.8	1.2	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
3-Nitroaniline	ND		5.6	1.4	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4,6-Dinitro-2-methylphenol	ND		9.3	2.3	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Bromophenyl phenyl ether	ND		1.4	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Chloro-3-methylphenol	ND		4.2	1.3	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Chloroaniline	ND		4.2	0.85	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Chlorophenyl phenyl ether	ND		1.4	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Nitroaniline	ND		5.6	1.7	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
4-Nitrophenol	ND		9.3	2.7	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Acenaphthene	0.48		0.42	0.081	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Acenaphthylene	0.38 J		0.42	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Acetophenone	ND		2.8	0.31	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Anthracene	1.3		0.42	0.068	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Atrazine	ND		5.6	1.0	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzaldehyde	ND		2.8	0.65	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzo[a]anthracene	3.3		0.42	0.096	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzo[a]pyrene	2.8		0.42	0.26	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzo[b]fluoranthene	4.2		0.42	0.18	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzo[g,h,i]perylene	0.85		0.42	0.20	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Benzo[k]fluoranthene	1.6		0.42	0.20	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Bis(2-chloroethoxy)methane	ND		2.8	0.34	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Bis(2-chloroethyl)ether	ND		2.8	0.34	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Bis(2-ethylhexyl) phthalate	ND		2.0	1.4	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Butyl benzyl phthalate	ND		2.0	0.62	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Caprolactam	ND		9.3	2.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Carbazole	0.76 J		1.4	0.54	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Chrysene	3.9		0.42	0.042	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20
Dibenz(a,h)anthracene	0.26 J		0.42	0.20	mg/Kg	☆	02/23/23 08:32	02/25/23 16:03	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Date Collected: 02/20/23 18:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 69.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.7		1.4	0.37	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Diethyl phthalate	ND		2.0	0.87	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Dimethyl phthalate	ND		2.0	0.39	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Di-n-butyl phthalate	ND		2.0	1.4	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Di-n-octyl phthalate	ND		2.0	0.79	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Fluoranthene	7.7		0.42	0.13	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Fluorene	1.0		0.42	0.077	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Hexachlorobenzene	ND		0.42	0.080	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Hexachlorobutadiene	ND		1.4	0.34	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Hexachlorocyclopentadiene	ND		9.3	1.7	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Hexachloroethane	ND		1.4	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Indeno[1,2,3-cd]pyrene	0.87		0.42	0.21	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Isophorone	ND		1.4	0.34	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
N-Nitrosodi-n-propylamine	ND		1.4	0.31	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
N-Nitrosodiphenylamine	ND		1.4	0.34	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Naphthalene	2.5		0.42	0.068	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Nitrobenzene	ND		2.8	0.37	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Pentachlorophenol	ND		4.2	1.6	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Phenanthrene	9.8		0.42	0.063	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Phenol	ND		1.4	0.23	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
Pyrene	7.1		0.42	0.060	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20
3 & 4 Methylphenol	ND		11	0.82	mg/Kg	✱	02/23/23 08:32	02/25/23 16:03	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	102		46 - 137	02/23/23 08:32	02/25/23 16:03	20
Phenol-d5 (Surr)	94		26 - 120	02/23/23 08:32	02/25/23 16:03	20
Nitrobenzene-d5 (Surr)	71		25 - 120	02/23/23 08:32	02/25/23 16:03	20
2-Fluorophenol (Surr)	72		20 - 120	02/23/23 08:32	02/25/23 16:03	20
2-Fluorobiphenyl (Surr)	87		34 - 120	02/23/23 08:32	02/25/23 16:03	20
2,4,6-Tribromophenol (Surr)	126	S1+	10 - 120	02/23/23 08:32	02/25/23 16:03	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0068	J	0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:25	1
Barium	0.70	B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:25	1
Cadmium	0.0037	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:25	1
Chromium	0.0051	J	0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:25	1
Lead	0.025	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:25	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:25	1
Silver	0.0013	J	0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	69.7		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	30.3		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 55.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		42	13	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,1,2,2-Tetrachloroethane	ND		42	25	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		42	11	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,1,2-Trichloroethane	ND		42	9.5	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,1-Dichloroethane	ND		42	8.0	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,1-Dichloroethene	ND		42	14	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,2,4-Trichlorobenzene	ND		42	22	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,2-Dibromo-3-Chloropropane	ND		84	37	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Ethylene Dibromide	ND		42	13	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,2-Dichlorobenzene	ND		42	20	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,2-Dichloroethane	ND		42	7.8	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,2-Dichloropropane	ND		42	6.2	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,3-Dichlorobenzene	ND		42	7.7	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
1,4-Dichlorobenzene	ND		42	9.2	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
2-Butanone (MEK)	ND		170	26	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
2-Hexanone	ND		170	44	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
4-Methyl-2-pentanone (MIBK)	ND		170	40	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Acetone	58 J		170	41	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Benzene	ND		42	7.0	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Dichlorobromomethane	ND		42	10	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Bromoform	ND		42	38	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Bromomethane	ND		42	28	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Carbon disulfide	ND		42	18	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Carbon tetrachloride	ND		42	17	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Chlorobenzene	ND		42	5.8	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Chloroethane	ND		42	25	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Chloroform	ND		42	9.0	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Chloromethane	ND		42	11	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
cis-1,2-Dichloroethene	ND		42	6.7	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
cis-1,3-Dichloropropene	ND		42	21	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Cyclohexane	ND		84	27	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Chlorodibromomethane	ND		42	20	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Dichlorodifluoromethane	ND		42	8.9	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Ethylbenzene	ND		42	7.8	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Isopropylbenzene	ND		42	6.3	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Methyl acetate	ND		210	28	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Methyl tert-butyl ether	ND		42	6.2	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Methylcyclohexane	ND		84	11	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Methylene Chloride	ND		84	64	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Styrene	ND		42	8.7	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Tetrachloroethene	ND		42	16	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Toluene	ND		42	40	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
trans-1,2-Dichloroethene	ND		42	10	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
trans-1,3-Dichloropropene	ND		42	18	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Trichloroethene	ND		42	24	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Trichlorofluoromethane	ND		42	23	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666
Vinyl chloride	0.063		0.0091	0.0032	mg/Kg	✱	02/22/23 11:38	02/26/23 19:07	1
Xylenes, Total	ND		84	15	mg/Kg	✱	02/22/23 19:09	02/24/23 01:11	66.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 55.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 01:11	66.6666
Toluene-d8 (Surr)	118		56 - 125	02/22/23 11:38	02/26/23 19:07	1
Dibromofluoromethane (Surr)	102		41 - 138	02/22/23 19:09	02/24/23 01:11	66.6666
Dibromofluoromethane (Surr)	96		41 - 138	02/22/23 11:38	02/26/23 19:07	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/22/23 19:09	02/24/23 01:11	66.6666
4-Bromofluorobenzene (Surr)	138	*3	41 - 143	02/22/23 11:38	02/26/23 19:07	1
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/22/23 19:09	02/24/23 01:11	66.6666
1,2-Dichloroethane-d4 (Surr)	85		58 - 125	02/22/23 11:38	02/26/23 19:07	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.8	0.60	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
bis (2-chloroisopropyl) ether	ND		3.5	0.35	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4,5-Trichlorophenol	ND		5.3	2.4	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4,6-Trichlorophenol	ND		5.3	2.3	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4-Dichlorophenol	ND		5.3	1.6	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4-Dimethylphenol	ND		5.3	1.4	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4-Dinitrophenol	ND		12	5.0	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,4-Dinitrotoluene	ND		7.1	2.2	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2,6-Dinitrotoluene	ND		7.1	2.0	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Chloronaphthalene	ND		1.8	0.50	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Chlorophenol	ND		1.8	0.35	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Methylnaphthalene	2.0		0.53	0.070	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Methylphenol	ND		7.1	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Nitroaniline	ND		7.1	1.4	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
2-Nitrophenol	ND		1.8	0.46	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
3,3'-Dichlorobenzidine	ND		3.5	1.5	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
3-Nitroaniline	ND		7.1	1.7	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4,6-Dinitro-2-methylphenol	ND		12	2.8	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Bromophenyl phenyl ether	ND		1.8	0.50	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Chloro-3-methylphenol	ND		5.3	1.6	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Chloroaniline	ND		5.3	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Chlorophenyl phenyl ether	ND		1.8	0.50	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Nitroaniline	ND		7.1	2.1	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
4-Nitrophenol	ND		12	3.3	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Acenaphthene	0.27	J	0.53	0.10	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Acenaphthylene	0.19	J	0.53	0.14	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Acetophenone	ND		3.5	0.39	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Anthracene	0.64		0.53	0.086	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Atrazine	ND		7.1	1.3	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzaldehyde	ND		3.5	0.82	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzo[a]anthracene	2.1		0.53	0.12	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzo[a]pyrene	2.2		0.53	0.33	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzo[b]fluoranthene	3.7		0.53	0.23	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzo[g,h,i]perylene	0.54		0.53	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Benzo[k]fluoranthene	1.1		0.53	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Bis(2-chloroethoxy)methane	ND		3.5	0.43	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Bis(2-chloroethyl)ether	ND		3.5	0.43	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Bis(2-ethylhexyl) phthalate	ND		2.5	1.8	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20
Butyl benzyl phthalate	ND		2.5	0.78	mg/Kg	✱	02/23/23 08:32	02/25/23 16:29	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 55.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		12	2.7	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Carbazole	ND		1.8	0.67	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Chrysene	2.7		0.53	0.053	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Dibenz(a,h)anthracene	ND		0.53	0.25	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Dibenzofuran	0.85	J	1.8	0.46	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Diethyl phthalate	ND		2.5	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Dimethyl phthalate	ND		2.5	0.50	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Di-n-butyl phthalate	ND		2.5	1.8	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Di-n-octyl phthalate	ND		2.5	0.99	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Fluoranthene	4.5		0.53	0.16	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Fluorene	0.37	J	0.53	0.097	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Hexachlorobenzene	ND		0.53	0.10	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Hexachlorobutadiene	ND		1.8	0.43	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Hexachlorocyclopentadiene	ND		12	2.2	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Hexachloroethane	ND		1.8	0.32	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Indeno[1,2,3-cd]pyrene	0.62		0.53	0.26	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Isophorone	ND		1.8	0.43	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
N-Nitrosodi-n-propylamine	ND		1.8	0.39	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
N-Nitrosodiphenylamine	ND		1.8	0.43	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Naphthalene	1.5		0.53	0.086	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Nitrobenzene	ND		3.5	0.46	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Pentachlorophenol	ND		5.3	2.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Phenanthrene	4.0		0.53	0.079	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Phenol	ND		1.8	0.28	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
Pyrene	4.0		0.53	0.076	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20
3 & 4 Methylphenol	ND		14	1.0	mg/Kg	☆	02/23/23 08:32	02/25/23 16:29	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	02/23/23 08:32	02/25/23 16:29	20
Phenol-d5 (Surr)	86		26 - 120	02/23/23 08:32	02/25/23 16:29	20
Nitrobenzene-d5 (Surr)	72		25 - 120	02/23/23 08:32	02/25/23 16:29	20
2-Fluorophenol (Surr)	71		20 - 120	02/23/23 08:32	02/25/23 16:29	20
2-Fluorobiphenyl (Surr)	84		34 - 120	02/23/23 08:32	02/25/23 16:29	20
2,4,6-Tribromophenol (Surr)	112		10 - 120	02/23/23 08:32	02/25/23 16:29	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.10	0.0081	mg/L		02/23/23 14:00	02/24/23 12:54	2
Barium	0.45	J B	1.0	0.0027	mg/L		02/23/23 14:00	02/24/23 12:54	2
Cadmium	0.0064	J	0.10	0.00041	mg/L		02/23/23 14:00	02/24/23 12:54	2
Chromium	ND		0.10	0.0081	mg/L		02/23/23 14:00	02/24/23 12:54	2
Lead	0.041	J	0.10	0.0055	mg/L		02/23/23 14:00	02/24/23 12:54	2
Selenium	ND		0.10	0.012	mg/L		02/23/23 14:00	02/24/23 12:54	2
Silver	0.0014	J	0.10	0.0012	mg/L		02/23/23 14:00	02/24/23 12:54	2

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:02	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 55.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	55.8		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	44.2		0.1	0.1	%			02/22/23 13:18	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 18:09	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 18:09	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 18:09	1
Benzene	ND		0.025	0.00042	mg/L			02/23/23 18:09	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 18:09	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 18:09	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:09	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:09	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/23/23 18:09	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120					02/23/23 18:09	1
Dibromofluoromethane (Surr)	98		71 - 121					02/23/23 18:09	1
4-Bromofluorobenzene (Surr)	115		80 - 120					02/23/23 18:09	1
1,2-Dichloroethane-d4 (Surr)	95		76 - 120					02/23/23 18:09	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 18:58	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 18:58	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 18:58	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 18:58	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 18:58	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 18:58	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 18:58	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 18:58	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 18:58	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 18:58	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 18:58	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 18:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137				02/23/23 12:44	02/24/23 18:58	1
Phenol-d5 (Surr)	61		26 - 120				02/23/23 12:44	02/24/23 18:58	1
Nitrobenzene-d5 (Surr)	73		24 - 120				02/23/23 12:44	02/24/23 18:58	1
2-Fluorophenol (Surr)	70		19 - 120				02/23/23 12:44	02/24/23 18:58	1
2-Fluorobiphenyl (Surr)	100		33 - 120				02/23/23 12:44	02/24/23 18:58	1
2,4,6-Tribromophenol (Surr)	109		10 - 120				02/23/23 12:44	02/24/23 18:58	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 11:47	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 11:47	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 11:47	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 11:47	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 11:47	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 11:47	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 11:47	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 145	02/23/23 12:51	02/24/23 11:47	1
DCB Decachlorobiphenyl	79		10 - 145	02/23/23 12:51	02/24/23 11:47	1
Tetrachloro-m-xylene	61		10 - 123	02/23/23 12:51	02/24/23 11:47	1
Tetrachloro-m-xylene	65		10 - 123	02/23/23 12:51	02/24/23 11:47	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 06:43	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 06:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	72		26 - 136	02/24/23 19:47	02/27/23 06:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	61.0		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	39.0		0.1	0.1	%			02/22/23 13:18	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 61.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		78	39	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1221	ND		78	47	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1232	ND		78	33	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1242	ND		78	30	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1248	ND		78	27	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1254	ND		78	33	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1260	ND		78	33	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1262	ND		78	34	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Aroclor-1268	ND		78	25	ug/Kg	☼	02/24/23 09:04	02/24/23 12:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	95		10 - 149				02/24/23 09:04	02/24/23 12:52	1
DCB Decachlorobiphenyl	108		10 - 174				02/24/23 09:04	02/24/23 12:52	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.92	0.31	ng/g	☼	02/24/23 17:55	02/27/23 12:45	1
Perfluorooctanesulfonic acid	0.87	J	0.92	0.31	ng/g	☼	02/24/23 17:55	02/27/23 12:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	72		26 - 159				02/24/23 17:55	02/27/23 12:45	1
13C8 PFOS	79		41 - 154				02/24/23 17:55	02/27/23 12:45	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.92	0.31	ng/g	☼	02/24/23 17:55	02/27/23 14:58	1
Perfluorooctanesulfonic acid	1.0		0.92	0.31	ng/g	☼	02/24/23 17:55	02/27/23 14:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	70		26 - 159				02/24/23 17:55	02/27/23 14:58	1
13C8 PFOS	79		41 - 154				02/24/23 17:55	02/27/23 14:58	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 47.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.81	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,1,2,2-Tetrachloroethane	ND		0.81	0.48	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.81	0.22	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,1,2-Trichloroethane	ND		0.81	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,1-Dichloroethane	ND		0.81	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,1-Dichloroethene	ND		0.81	0.26	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,2,4-Trichlorobenzene	ND		0.81	0.43	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,2-Dibromo-3-Chloropropane	ND		1.6	0.71	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Ethylene Dibromide	ND		0.81	0.26	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,2-Dichlorobenzene	ND		0.81	0.39	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,2-Dichloroethane	ND		0.81	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,2-Dichloropropane	ND		0.81	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,3-Dichlorobenzene	ND		0.81	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
1,4-Dichlorobenzene	ND		0.81	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
2-Butanone (MEK)	ND		3.2	0.51	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
2-Hexanone	ND		3.2	0.85	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
4-Methyl-2-pentanone (MIBK)	ND		3.2	0.77	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Acetone	1.4	J	3.2	0.79	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Benzene	ND		0.81	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Dichlorobromomethane	ND		0.81	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Bromoform	ND		0.81	0.74	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Bromomethane	ND		0.81	0.54	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Carbon disulfide	ND		0.81	0.35	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Carbon tetrachloride	ND		0.81	0.33	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Chlorobenzene	ND		0.81	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Chloroethane	ND		0.81	0.48	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Chloroform	ND		0.81	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Chloromethane	ND		0.81	0.21	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
cis-1,2-Dichloroethene	ND		0.81	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
cis-1,3-Dichloropropene	ND		0.81	0.40	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Cyclohexane	ND		1.6	0.53	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Chlorodibromomethane	ND		0.81	0.38	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Dichlorodifluoromethane	ND		0.81	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Ethylbenzene	ND		0.81	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Isopropylbenzene	ND		0.81	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Methyl acetate	1.3	J	4.0	0.54	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Methyl tert-butyl ether	ND		0.81	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Methylcyclohexane	ND		1.6	0.21	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Methylene Chloride	ND		1.6	1.2	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Styrene	ND		0.81	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Tetrachloroethene	ND		0.81	0.31	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Toluene	ND		0.81	0.77	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
trans-1,2-Dichloroethene	ND		0.81	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
trans-1,3-Dichloropropene	ND		0.81	0.34	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Trichloroethene	ND		0.81	0.46	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Trichlorofluoromethane	ND		0.81	0.44	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Vinyl chloride	3.2		0.81	0.40	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1
Xylenes, Total	ND		1.6	0.29	mg/Kg	✱	02/22/23 19:09	02/24/23 01:36	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 47.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		56 - 125	02/22/23 19:09	02/24/23 01:36	1
Toluene-d8 (Surr)	107		56 - 125	02/22/23 19:09	02/24/23 17:55	2.857
Dibromofluoromethane (Surr)	96		41 - 138	02/22/23 19:09	02/24/23 01:36	1
Dibromofluoromethane (Surr)	103		41 - 138	02/22/23 19:09	02/24/23 17:55	2.857
4-Bromofluorobenzene (Surr)	105		41 - 143	02/22/23 19:09	02/24/23 01:36	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/22/23 19:09	02/24/23 17:55	2.857
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/22/23 19:09	02/24/23 01:36	1
1,2-Dichloroethane-d4 (Surr)	113		58 - 125	02/22/23 19:09	02/24/23 17:55	2.857

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.7	0.90	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
bis (2-chloroisopropyl) ether	ND		5.3	0.53	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4,5-Trichlorophenol	ND		8.0	3.7	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4,6-Trichlorophenol	ND		8.0	3.4	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4-Dichlorophenol	ND		8.0	2.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4-Dimethylphenol	ND		8.0	2.1	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4-Dinitrophenol	ND		18	7.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,4-Dinitrotoluene	ND		11	3.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2,6-Dinitrotoluene	ND		11	3.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Chloronaphthalene	ND		2.7	0.75	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Chlorophenol	ND		2.7	0.53	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Methylnaphthalene	5.9		0.80	0.10	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Methylphenol	ND		11	1.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Nitroaniline	ND		11	2.1	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
2-Nitrophenol	ND		2.7	0.69	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
3,3'-Dichlorobenzidine	ND		5.3	2.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
3-Nitroaniline	ND		11	2.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4,6-Dinitro-2-methylphenol	ND		18	4.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Bromophenyl phenyl ether	ND		2.7	0.75	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Chloro-3-methylphenol	ND		8.0	2.4	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Chloroaniline	ND		8.0	1.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Chlorophenyl phenyl ether	ND		2.7	0.75	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Nitroaniline	ND		11	3.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
4-Nitrophenol	ND		18	5.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Acenaphthene	0.89		0.80	0.15	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Acenaphthylene	0.65 J		0.80	0.21	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Acetophenone	ND		5.3	0.59	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Anthracene	0.95		0.80	0.13	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Atrazine	ND		11	1.9	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzaldehyde	ND		5.3	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzo[a]anthracene	3.2		0.80	0.18	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzo[a]pyrene	3.1		0.80	0.50	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzo[b]fluoranthene	4.2		0.80	0.35	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzo[g,h,i]perylene	1.6		0.80	0.38	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Benzo[k]fluoranthene	1.7		0.80	0.37	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Bis(2-chloroethoxy)methane	ND		5.3	0.64	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Bis(2-chloroethyl)ether	ND		5.3	0.64	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Bis(2-ethylhexyl) phthalate	ND		3.7	2.7	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25
Butyl benzyl phthalate	ND		3.7	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:36	25

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 47.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		18	4.0	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Carbazole	ND		2.7	1.0	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Chrysene	3.8		0.80	0.079	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Dibenz(a,h)anthracene	0.40	J	0.80	0.37	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Dibenzofuran	2.5	J	2.7	0.69	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Diethyl phthalate	ND		3.7	1.6	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Dimethyl phthalate	ND		3.7	0.75	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Di-n-butyl phthalate	ND		3.7	2.7	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Di-n-octyl phthalate	ND		3.7	1.5	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Fluoranthene	7.6		0.80	0.24	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Fluorene	1.1		0.80	0.15	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Hexachlorobenzene	ND		0.80	0.15	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Hexachlorobutadiene	ND		2.7	0.64	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Hexachlorocyclopentadiene	ND		18	3.3	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Hexachloroethane	ND		2.7	0.48	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Indeno[1,2,3-cd]pyrene	1.4		0.80	0.39	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Isophorone	ND		2.7	0.64	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
N-Nitrosodi-n-propylamine	ND		2.7	0.59	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
N-Nitrosodiphenylamine	ND		2.7	0.64	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Naphthalene	4.8		0.80	0.13	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Nitrobenzene	ND		5.3	0.69	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Pentachlorophenol	ND		8.0	3.1	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Phenanthrene	9.0		0.80	0.12	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Phenol	ND		2.7	0.43	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
Pyrene	7.7		0.80	0.11	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25
3 & 4 Methylphenol	ND		21	1.5	mg/Kg	✳	02/23/23 08:32	02/25/23 12:36	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137	02/23/23 08:32	02/25/23 12:36	25
Phenol-d5 (Surr)	99		26 - 120	02/23/23 08:32	02/25/23 12:36	25
Nitrobenzene-d5 (Surr)	82		25 - 120	02/23/23 08:32	02/25/23 12:36	25
2-Fluorophenol (Surr)	85		20 - 120	02/23/23 08:32	02/25/23 12:36	25
2-Fluorobiphenyl (Surr)	91		34 - 120	02/23/23 08:32	02/25/23 12:36	25
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/23/23 08:32	02/25/23 12:36	25

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	104		46 - 137	02/23/23 08:32	02/25/23 18:12	50
Phenol-d5 (Surr)	106		26 - 120	02/23/23 08:32	02/25/23 18:12	50
Nitrobenzene-d5 (Surr)	84		25 - 120	02/23/23 08:32	02/25/23 18:12	50
2-Fluorophenol (Surr)	91		20 - 120	02/23/23 08:32	02/25/23 18:12	50
2-Fluorobiphenyl (Surr)	95		34 - 120	02/23/23 08:32	02/25/23 18:12	50
2,4,6-Tribromophenol (Surr)	196	S1+	10 - 120	02/23/23 08:32	02/25/23 18:12	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:42	1
Barium	0.44	J B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:42	1
Cadmium	0.016	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:42	1
Chromium	0.0054	J	0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:42	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 47.4

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.12		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:42	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:42	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:42	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	47.4		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	52.6		0.1	0.1	%			02/22/23 13:18	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 40.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.95	0.30	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,1,2,2-Tetrachloroethane	ND		0.95	0.57	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.95	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,1,2-Trichloroethane	ND		0.95	0.22	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,1-Dichloroethane	ND		0.95	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,1-Dichloroethene	ND		0.95	0.31	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,2,4-Trichlorobenzene	ND		0.95	0.50	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,2-Dibromo-3-Chloropropane	ND		1.9	0.84	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Ethylene Dibromide	ND		0.95	0.30	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,2-Dichlorobenzene	ND		0.95	0.45	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,2-Dichloroethane	ND		0.95	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,2-Dichloropropane	ND		0.95	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,3-Dichlorobenzene	ND		0.95	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
1,4-Dichlorobenzene	ND		0.95	0.21	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
2-Butanone (MEK)	ND		3.8	0.60	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
2-Hexanone	ND		3.8	1.0	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
4-Methyl-2-pentanone (MIBK)	ND		3.8	0.90	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Acetone	1.6	J	3.8	0.92	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Benzene	ND		0.95	0.16	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Dichlorobromomethane	ND		0.95	0.23	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Bromoform	ND		0.95	0.86	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Bromomethane	ND		0.95	0.63	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Carbon disulfide	ND		0.95	0.41	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Carbon tetrachloride	ND		0.95	0.39	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Chlorobenzene	ND		0.95	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Chloroethane	ND		0.95	0.57	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Chloroform	ND		0.95	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Chloromethane	ND		0.95	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
cis-1,2-Dichloroethene	ND		0.95	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
cis-1,3-Dichloropropene	ND		0.95	0.47	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Cyclohexane	ND		1.9	0.62	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Chlorodibromomethane	ND		0.95	0.44	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Dichlorodifluoromethane	ND		0.95	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Ethylbenzene	ND		0.95	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Isopropylbenzene	ND		0.95	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Methyl acetate	ND		4.7	0.64	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Methyl tert-butyl ether	ND		0.95	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Methylcyclohexane	ND		1.9	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Methylene Chloride	ND		1.9	1.5	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Styrene	ND		0.95	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Tetrachloroethene	ND		0.95	0.37	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Toluene	ND		0.95	0.91	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
trans-1,2-Dichloroethene	ND		0.95	0.24	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
trans-1,3-Dichloropropene	ND		0.95	0.40	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Trichloroethene	ND		0.95	0.54	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Trichlorofluoromethane	ND		0.95	0.52	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1
Vinyl chloride	0.14		0.010	0.0037	mg/Kg	✱	02/22/23 11:38	02/25/23 02:06	1
Xylenes, Total	ND		1.9	0.34	mg/Kg	✱	02/22/23 19:09	02/24/23 02:02	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 40.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 02:02	1
Toluene-d8 (Surr)	107		56 - 125	02/22/23 19:09	02/24/23 18:20	1
Toluene-d8 (Surr)	105		56 - 125	02/22/23 11:38	02/25/23 02:06	1
Dibromofluoromethane (Surr)	94		41 - 138	02/22/23 19:09	02/24/23 02:02	1
Dibromofluoromethane (Surr)	97		41 - 138	02/22/23 19:09	02/24/23 18:20	1
Dibromofluoromethane (Surr)	89		41 - 138	02/22/23 11:38	02/25/23 02:06	1
4-Bromofluorobenzene (Surr)	104		41 - 143	02/22/23 19:09	02/24/23 02:02	1
4-Bromofluorobenzene (Surr)	107		41 - 143	02/22/23 19:09	02/24/23 18:20	1
4-Bromofluorobenzene (Surr)	132		41 - 143	02/22/23 11:38	02/25/23 02:06	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125	02/22/23 19:09	02/24/23 02:02	1
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/22/23 19:09	02/24/23 18:20	1
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	02/22/23 11:38	02/25/23 02:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.4	0.83	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
bis (2-chloroisopropyl) ether	ND		4.9	0.49	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4,5-Trichlorophenol	ND		7.3	3.4	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4,6-Trichlorophenol	ND		7.3	3.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4-Dichlorophenol	ND		7.3	2.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4-Dimethylphenol	ND		7.3	2.0	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4-Dinitrophenol	ND		16	6.9	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,4-Dinitrotoluene	ND		9.8	3.0	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2,6-Dinitrotoluene	ND		9.8	2.7	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Chloronaphthalene	ND		2.4	0.68	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Chlorophenol	ND		2.4	0.49	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Methylnaphthalene	2.5		0.73	0.096	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Methylphenol	ND		9.8	1.5	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Nitroaniline	ND		9.8	2.0	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
2-Nitrophenol	ND		2.4	0.63	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
3,3'-Dichlorobenzidine	ND		4.9	2.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
3-Nitroaniline	ND		9.8	2.4	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4,6-Dinitro-2-methylphenol	ND		16	3.9	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Bromophenyl phenyl ether	ND		2.4	0.68	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Chloro-3-methylphenol	ND		7.3	2.2	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Chloroaniline	ND		7.3	1.5	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Chlorophenyl phenyl ether	ND		2.4	0.68	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Nitroaniline	ND		9.8	2.9	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
4-Nitrophenol	ND		16	4.6	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Acenaphthene	0.47	J	0.73	0.14	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Acenaphthylene	0.30	J	0.73	0.20	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Acetophenone	ND		4.9	0.54	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Anthracene	0.68	J	0.73	0.12	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Atrazine	ND		9.8	1.8	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzaldehyde	ND		4.9	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzo[a]anthracene	4.7		0.73	0.17	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzo[a]pyrene	4.8		0.73	0.46	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzo[b]fluoranthene	6.9		0.73	0.32	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzo[g,h,i]perylene	1.8		0.73	0.35	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Benzo[k]fluoranthene	2.7		0.73	0.34	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 40.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		4.9	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Bis(2-chloroethyl)ether	ND		4.9	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Bis(2-ethylhexyl) phthalate	ND		3.4	2.5	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Butyl benzyl phthalate	ND		3.4	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Caprolactam	ND		16	3.7	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Carbazole	ND		2.4	0.93	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Chrysene	4.6		0.73	0.073	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Dibenz(a,h)anthracene	0.45	J	0.73	0.34	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Dibenzofuran	1.0	J	2.4	0.63	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Diethyl phthalate	ND		3.4	1.5	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Dimethyl phthalate	ND		3.4	0.68	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Di-n-butyl phthalate	ND		3.4	2.5	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Di-n-octyl phthalate	ND		3.4	1.4	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Fluoranthene	7.5		0.73	0.22	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Fluorene	0.50	J	0.73	0.13	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Hexachlorobenzene	ND		0.73	0.14	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Hexachlorobutadiene	ND		2.4	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Hexachlorocyclopentadiene	ND		16	3.0	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Hexachloroethane	ND		2.4	0.44	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Indeno[1,2,3-cd]pyrene	1.8		0.73	0.36	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Isophorone	ND		2.4	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
N-Nitrosodi-n-propylamine	ND		2.4	0.54	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
N-Nitrosodiphenylamine	ND		2.4	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Naphthalene	1.9		0.73	0.12	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Nitrobenzene	ND		4.9	0.63	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Pentachlorophenol	ND		7.3	2.8	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Phenanthrene	3.6		0.73	0.11	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Phenol	ND		2.4	0.39	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
Pyrene	7.3		0.73	0.10	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20
3 & 4 Methylphenol	ND		20	1.4	mg/Kg	✱	02/23/23 08:32	02/25/23 13:28	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	90		46 - 137	02/23/23 08:32	02/25/23 13:28	20
Phenol-d5 (Surr)	90		26 - 120	02/23/23 08:32	02/25/23 13:28	20
Nitrobenzene-d5 (Surr)	71		25 - 120	02/23/23 08:32	02/25/23 13:28	20
2-Fluorophenol (Surr)	71		20 - 120	02/23/23 08:32	02/25/23 13:28	20
2-Fluorobiphenyl (Surr)	86		34 - 120	02/23/23 08:32	02/25/23 13:28	20
2,4,6-Tribromophenol (Surr)	107		10 - 120	02/23/23 08:32	02/25/23 13:28	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:46	1
Barium	0.28	J B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:46	1
Cadmium	0.0032	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:46	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:46	1
Lead	0.012	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:46	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:46	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:46	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 40.7

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	40.7		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	59.3		0.1	0.1	%			02/22/23 13:18	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 59.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.54	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,1,2,2-Tetrachloroethane	ND		0.54	0.32	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.54	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,1,2-Trichloroethane	ND		0.54	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,1-Dichloroethane	ND		0.54	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,1-Dichloroethene	ND		0.54	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,2,4-Trichlorobenzene	ND		0.54	0.29	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,2-Dibromo-3-Chloropropane	ND		1.1	0.48	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Ethylene Dibromide	ND		0.54	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,2-Dichlorobenzene	ND		0.54	0.26	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,2-Dichloroethane	ND		0.54	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,2-Dichloropropane	ND		0.54	0.080	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,3-Dichlorobenzene	ND		0.54	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
1,4-Dichlorobenzene	ND		0.54	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
2-Butanone (MEK)	ND		2.2	0.34	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
2-Hexanone	ND		2.2	0.57	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
4-Methyl-2-pentanone (MIBK)	ND		2.2	0.51	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Acetone	0.93	J	2.2	0.53	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Benzene	ND		0.54	0.091	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Dichlorobromomethane	ND		0.54	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Bromoform	ND		0.54	0.49	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Bromomethane	ND		0.54	0.36	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Carbon disulfide	ND		0.54	0.23	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Carbon tetrachloride	ND		0.54	0.22	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Chlorobenzene	ND		0.54	0.076	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Chloroethane	ND		0.54	0.32	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Chloroform	ND		0.54	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Chloromethane	ND		0.54	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
cis-1,2-Dichloroethene	ND		0.54	0.087	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
cis-1,3-Dichloropropene	ND		0.54	0.27	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Cyclohexane	ND		1.1	0.35	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Chlorodibromomethane	ND		0.54	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Dichlorodifluoromethane	ND		0.54	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Ethylbenzene	ND		0.54	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Isopropylbenzene	ND		0.54	0.082	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Methyl acetate	ND		2.7	0.36	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Methyl tert-butyl ether	ND		0.54	0.080	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Methylcyclohexane	0.19	J	1.1	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Methylene Chloride	ND		1.1	0.83	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Styrene	ND		0.54	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Tetrachloroethene	ND		0.54	0.21	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Toluene	ND		0.54	0.52	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
trans-1,2-Dichloroethene	ND		0.54	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
trans-1,3-Dichloropropene	ND		0.54	0.23	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Trichloroethene	ND		0.54	0.31	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Trichlorofluoromethane	ND		0.54	0.30	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Vinyl chloride	ND		0.54	0.27	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1
Xylenes, Total	ND		1.1	0.20	mg/Kg	✱	02/22/23 19:09	02/24/23 02:27	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 59.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 02:27	1
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 18:45	2
Dibromofluoromethane (Surr)	94		41 - 138	02/22/23 19:09	02/24/23 02:27	1
Dibromofluoromethane (Surr)	99		41 - 138	02/22/23 19:09	02/24/23 18:45	2
4-Bromofluorobenzene (Surr)	106		41 - 143	02/22/23 19:09	02/24/23 02:27	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/22/23 19:09	02/24/23 18:45	2
1,2-Dichloroethane-d4 (Surr)	104		58 - 125	02/22/23 19:09	02/24/23 02:27	1
1,2-Dichloroethane-d4 (Surr)	112		58 - 125	02/22/23 19:09	02/24/23 18:45	2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		4.2	1.4	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
bis (2-chloroisopropyl) ether	ND		8.3	0.83	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4,5-Trichlorophenol	ND		13	5.8	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4,6-Trichlorophenol	ND		13	5.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4-Dichlorophenol	ND		13	3.7	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4-Dimethylphenol	ND		13	3.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4-Dinitrophenol	ND		28	12	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,4-Dinitrotoluene	ND		17	5.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2,6-Dinitrotoluene	ND		17	4.7	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Chloronaphthalene	ND		4.2	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Chlorophenol	ND		4.2	0.83	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Methylnaphthalene	1.6		1.3	0.16	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Methylphenol	ND		17	2.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Nitroaniline	ND		17	3.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
2-Nitrophenol	ND		4.2	1.1	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
3,3'-Dichlorobenzidine	ND		8.3	3.6	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
3-Nitroaniline	ND		17	4.1	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4,6-Dinitro-2-methylphenol	ND		28	6.7	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Bromophenyl phenyl ether	ND		4.2	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Chloro-3-methylphenol	ND		13	3.8	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Chloroaniline	ND		13	2.5	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Chlorophenyl phenyl ether	ND		4.2	1.2	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Nitroaniline	ND		17	5.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
4-Nitrophenol	ND		28	7.8	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Acenaphthene	ND		1.3	0.24	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Acenaphthylene	ND		1.3	0.33	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Acetophenone	ND		8.3	0.92	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Anthracene	ND		1.3	0.20	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Atrazine	ND		17	3.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzaldehyde	ND		8.3	1.9	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzo[a]anthracene	0.90 J		1.3	0.28	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzo[a]pyrene	ND		1.3	0.78	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzo[b]fluoranthene	1.4		1.3	0.54	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzo[g,h,i]perylene	0.76 J		1.3	0.59	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Benzo[k]fluoranthene	ND		1.3	0.58	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Bis(2-chloroethoxy)methane	ND		8.3	1.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Bis(2-chloroethyl)ether	ND		8.3	1.0	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Bis(2-ethylhexyl) phthalate	ND		5.8	4.3	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50
Butyl benzyl phthalate	ND		5.8	1.8	mg/Kg	☼	02/23/23 08:32	02/25/23 12:10	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 59.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		28	6.3	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Carbazole	ND		4.2	1.6	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Chrysene	0.97	J	1.3	0.12	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Dibenz(a,h)anthracene	ND		1.3	0.58	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Dibenzofuran	ND		4.2	1.1	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Diethyl phthalate	ND		5.8	2.6	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Dimethyl phthalate	ND		5.8	1.2	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Di-n-butyl phthalate	ND		5.8	4.2	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Di-n-octyl phthalate	ND		5.8	2.3	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Fluoranthene	1.5		1.3	0.37	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Fluorene	ND		1.3	0.23	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Hexachlorobenzene	ND		1.3	0.24	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Hexachlorobutadiene	ND		4.2	1.0	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Hexachlorocyclopentadiene	ND		28	5.2	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Hexachloroethane	ND		4.2	0.75	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Indeno[1,2,3-cd]pyrene	ND		1.3	0.61	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Isophorone	ND		4.2	1.0	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
N-Nitrosodi-n-propylamine	ND		4.2	0.92	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
N-Nitrosodiphenylamine	ND		4.2	1.0	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Naphthalene	1.1	J	1.3	0.20	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Nitrobenzene	ND		8.3	1.1	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Pentachlorophenol	ND		13	4.8	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Phenanthrene	1.2	J	1.3	0.19	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Phenol	ND		4.2	0.67	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
Pyrene	1.4		1.3	0.18	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50
3 & 4 Methylphenol	ND		33	2.4	mg/Kg	✳	02/23/23 08:32	02/25/23 12:10	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	103		46 - 137	02/23/23 08:32	02/25/23 12:10	50
Phenol-d5 (Surr)	102		26 - 120	02/23/23 08:32	02/25/23 12:10	50
Nitrobenzene-d5 (Surr)	79		25 - 120	02/23/23 08:32	02/25/23 12:10	50
2-Fluorophenol (Surr)	78		20 - 120	02/23/23 08:32	02/25/23 12:10	50
2-Fluorobiphenyl (Surr)	100		34 - 120	02/23/23 08:32	02/25/23 12:10	50
2,4,6-Tribromophenol (Surr)	193	S1+	10 - 120	02/23/23 08:32	02/25/23 12:10	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	95		46 - 137	02/23/23 08:32	02/25/23 15:11	100
Phenol-d5 (Surr)	96		26 - 120	02/23/23 08:32	02/25/23 15:11	100
Nitrobenzene-d5 (Surr)	79		25 - 120	02/23/23 08:32	02/25/23 15:11	100
2-Fluorophenol (Surr)	59		20 - 120	02/23/23 08:32	02/25/23 15:11	100
2-Fluorobiphenyl (Surr)	85		34 - 120	02/23/23 08:32	02/25/23 15:11	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/23/23 08:32	02/25/23 15:11	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J	0.10	0.0081	mg/L		02/23/23 14:00	02/24/23 12:59	2
Barium	0.49	J B	1.0	0.0027	mg/L		02/23/23 14:00	02/24/23 12:59	2
Cadmium	0.0081	J	0.10	0.00041	mg/L		02/23/23 14:00	02/24/23 12:59	2
Chromium	ND		0.10	0.0081	mg/L		02/23/23 14:00	02/24/23 12:59	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 59.7

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.22		0.10	0.0055	mg/L		02/23/23 14:00	02/24/23 12:59	2
Selenium	ND		0.10	0.012	mg/L		02/23/23 14:00	02/24/23 12:59	2
Silver	0.0016	J	0.10	0.0012	mg/L		02/23/23 14:00	02/24/23 12:59	2

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	59.7		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	40.3		0.1	0.1	%			02/22/23 13:18	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.28	0.087	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,1,2,2-Tetrachloroethane	ND		0.28	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.28	0.074	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,1,2-Trichloroethane	ND		0.28	0.063	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,1-Dichloroethane	ND		0.28	0.053	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,1-Dichloroethene	ND		0.28	0.091	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,2,4-Trichlorobenzene	ND		0.28	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,2-Dibromo-3-Chloropropane	ND		0.55	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Ethylene Dibromide	ND		0.28	0.088	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,2-Dichlorobenzene	ND		0.28	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,2-Dichloroethane	ND		0.28	0.052	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,2-Dichloropropane	ND		0.28	0.041	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,3-Dichlorobenzene	ND		0.28	0.051	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
1,4-Dichlorobenzene	ND		0.28	0.061	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
2-Butanone (MEK)	ND		1.1	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
2-Hexanone	ND		1.1	0.29	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
4-Methyl-2-pentanone (MIBK)	ND		1.1	0.26	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Acetone	0.53	J	1.1	0.27	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Benzene	ND		0.28	0.047	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Dichlorobromomethane	ND		0.28	0.068	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Bromoform	ND		0.28	0.25	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Bromomethane	ND		0.28	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Carbon disulfide	ND		0.28	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Carbon tetrachloride	ND		0.28	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Chlorobenzene	ND		0.28	0.039	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Chloroethane	ND		0.28	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Chloroform	ND		0.28	0.060	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Chloromethane	ND		0.28	0.073	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
cis-1,2-Dichloroethene	ND		0.28	0.044	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
cis-1,3-Dichloropropene	ND		0.28	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Cyclohexane	ND		0.55	0.18	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Chlorodibromomethane	ND		0.28	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Dichlorodifluoromethane	ND		0.28	0.059	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Ethylbenzene	ND		0.28	0.052	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Isopropylbenzene	ND		0.28	0.042	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Methyl acetate	ND		1.4	0.19	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Methyl tert-butyl ether	ND		0.28	0.041	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Methylcyclohexane	ND		0.55	0.073	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Methylene Chloride	ND		0.55	0.43	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Styrene	ND		0.28	0.058	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Tetrachloroethene	ND		0.28	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Toluene	ND		0.28	0.27	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
trans-1,2-Dichloroethene	ND		0.28	0.069	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
trans-1,3-Dichloropropene	ND		0.28	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Trichloroethene	ND		0.28	0.16	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Trichlorofluoromethane	ND		0.28	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Vinyl chloride	ND		0.28	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1
Xylenes, Total	ND		0.55	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 02:52	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 84.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	02/22/23 19:09	02/24/23 02:52	1
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 19:10	4
Dibromofluoromethane (Surr)	100		41 - 138	02/22/23 19:09	02/24/23 02:52	1
Dibromofluoromethane (Surr)	98		41 - 138	02/22/23 19:09	02/24/23 19:10	4
4-Bromofluorobenzene (Surr)	105		41 - 143	02/22/23 19:09	02/24/23 02:52	1
4-Bromofluorobenzene (Surr)	103		41 - 143	02/22/23 19:09	02/24/23 19:10	4
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/22/23 19:09	02/24/23 02:52	1
1,2-Dichloroethane-d4 (Surr)	110		58 - 125	02/22/23 19:09	02/24/23 19:10	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.40	0.14	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
bis (2-chloroisopropyl) ether	ND		0.80	0.080	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4,5-Trichlorophenol	ND		1.2	0.55	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4,6-Trichlorophenol	ND		1.2	0.51	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4-Dichlorophenol	ND		1.2	0.35	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4-Dimethylphenol	ND		1.2	0.32	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4-Dinitrophenol	ND		2.6	1.1	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,4-Dinitrotoluene	ND		1.6	0.50	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2,6-Dinitrotoluene	ND		1.6	0.45	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Chloronaphthalene	ND		0.40	0.11	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Chlorophenol	ND		0.40	0.080	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Methylnaphthalene	0.21		0.12	0.016	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Methylphenol	ND		1.6	0.25	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Nitroaniline	ND		1.6	0.32	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
2-Nitrophenol	ND		0.40	0.10	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
3,3'-Dichlorobenzidine	ND		0.80	0.34	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
3-Nitroaniline	ND		1.6	0.39	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4,6-Dinitro-2-methylphenol	ND		2.6	0.64	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Bromophenyl phenyl ether	ND		0.40	0.11	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Chloro-3-methylphenol	ND		1.2	0.36	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Chloroaniline	ND		1.2	0.24	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Chlorophenyl phenyl ether	ND		0.40	0.11	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Nitroaniline	ND		1.6	0.48	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
4-Nitrophenol	ND		2.6	0.75	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Acenaphthene	0.11	J	0.12	0.023	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Acenaphthylene	ND		0.12	0.032	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Acetophenone	ND		0.80	0.088	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Anthracene	0.25		0.12	0.019	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Atrazine	ND		1.6	0.29	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzaldehyde	ND		0.80	0.18	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzo[a]anthracene	0.78		0.12	0.027	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzo[a]pyrene	0.64		0.12	0.075	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzo[b]fluoranthene	1.0		0.12	0.052	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzo[g,h,i]perylene	0.16		0.12	0.057	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Benzo[k]fluoranthene	0.44		0.12	0.056	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Bis(2-chloroethoxy)methane	ND		0.80	0.096	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Bis(2-chloroethyl)ether	ND		0.80	0.096	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Bis(2-ethylhexyl) phthalate	0.63		0.56	0.41	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667
Butyl benzyl phthalate	ND		0.56	0.18	mg/Kg	☼	02/23/23 08:32	02/25/23 17:21	6.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 84.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.6	0.60	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Carbazole	0.21	J	0.40	0.15	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Chrysene	0.89		0.12	0.012	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Dibenz(a,h)anthracene	ND		0.12	0.055	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Dibenzofuran	0.14	J	0.40	0.10	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Diethyl phthalate	ND		0.56	0.25	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Dimethyl phthalate	ND		0.56	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Di-n-butyl phthalate	ND		0.56	0.41	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Di-n-octyl phthalate	ND		0.56	0.22	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Fluoranthene	2.0		0.12	0.036	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Fluorene	0.15		0.12	0.022	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Hexachlorobenzene	ND		0.12	0.023	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Hexachlorobutadiene	ND		0.40	0.096	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Hexachlorocyclopentadiene	ND		2.6	0.50	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Hexachloroethane	ND		0.40	0.072	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Indeno[1,2,3-cd]pyrene	0.17		0.12	0.059	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Isophorone	ND		0.40	0.096	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
N-Nitrosodi-n-propylamine	ND		0.40	0.088	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
N-Nitrosodiphenylamine	ND		0.40	0.096	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Naphthalene	0.17		0.12	0.019	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Nitrobenzene	ND		0.80	0.10	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Pentachlorophenol	ND		1.2	0.47	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Phenanthrene	1.3		0.12	0.018	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Phenol	ND		0.40	0.064	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
Pyrene	1.6		0.12	0.017	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667
3 & 4 Methylphenol	ND		3.2	0.23	mg/Kg	☆	02/23/23 08:32	02/25/23 17:21	6.667

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	109		46 - 137	02/23/23 08:32	02/25/23 17:21	6.667
Phenol-d5 (Surr)	112		26 - 120	02/23/23 08:32	02/25/23 17:21	6.667
Nitrobenzene-d5 (Surr)	83		25 - 120	02/23/23 08:32	02/25/23 17:21	6.667
2-Fluorophenol (Surr)	89		20 - 120	02/23/23 08:32	02/25/23 17:21	6.667
2-Fluorobiphenyl (Surr)	98		34 - 120	02/23/23 08:32	02/25/23 17:21	6.667
2,4,6-Tribromophenol (Surr)	90		10 - 120	02/23/23 08:32	02/25/23 17:21	6.667

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 11:55	1
Barium	0.89	B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 11:55	1
Cadmium	0.0019	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 11:55	1
Chromium	0.0041	J	0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 11:55	1
Lead	0.0083	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 11:55	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 11:55	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 11:55	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:15	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 84.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.5		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	15.5		0.1	0.1	%			02/22/23 13:18	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Date Collected: 02/21/23 14:30

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 65.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.47	0.15	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,1,2,2-Tetrachloroethane	ND		0.47	0.28	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.47	0.12	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,1,2-Trichloroethane	ND		0.47	0.11	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,1-Dichloroethane	ND		0.47	0.089	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,1-Dichloroethene	ND		0.47	0.15	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,2,4-Trichlorobenzene	ND		0.47	0.25	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,2-Dibromo-3-Chloropropane	ND		0.93	0.41	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Ethylene Dibromide	ND		0.47	0.15	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,2-Dichlorobenzene	ND		0.47	0.22	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,2-Dichloroethane	ND		0.47	0.088	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,2-Dichloropropane	ND		0.47	0.069	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,3-Dichlorobenzene	ND		0.47	0.086	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
1,4-Dichlorobenzene	ND		0.47	0.10	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
2-Butanone (MEK)	ND		1.9	0.29	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
2-Hexanone	ND		1.9	0.49	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
4-Methyl-2-pentanone (MIBK)	ND		1.9	0.44	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Acetone	1.0	J	1.9	0.45	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Benzene	ND		0.47	0.078	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Dichlorobromomethane	ND		0.47	0.11	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Bromoform	ND		0.47	0.42	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Bromomethane	ND		0.47	0.31	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Carbon disulfide	ND		0.47	0.20	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Carbon tetrachloride	ND		0.47	0.19	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Chlorobenzene	ND		0.47	0.065	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Chloroethane	ND		0.47	0.28	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Chloroform	ND		0.47	0.10	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Chloromethane	ND		0.47	0.12	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
cis-1,2-Dichloroethene	ND		0.47	0.074	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
cis-1,3-Dichloropropene	ND		0.47	0.23	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Cyclohexane	ND		0.93	0.30	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Chlorodibromomethane	ND		0.47	0.22	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Dichlorodifluoromethane	ND		0.47	0.099	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Ethylbenzene	ND		0.47	0.088	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Isopropylbenzene	ND		0.47	0.071	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Methyl acetate	0.62	J	2.3	0.31	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Methyl tert-butyl ether	ND		0.47	0.069	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Methylcyclohexane	ND		0.93	0.12	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Methylene Chloride	ND		0.93	0.71	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Styrene	ND		0.47	0.097	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Tetrachloroethene	ND		0.47	0.18	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Toluene	ND		0.47	0.45	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
trans-1,2-Dichloroethene	ND		0.47	0.12	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
trans-1,3-Dichloropropene	ND		0.47	0.20	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Trichloroethene	ND		0.47	0.27	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Trichlorofluoromethane	ND		0.47	0.26	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Vinyl chloride	ND		0.47	0.23	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1
Xylenes, Total	ND		0.93	0.17	mg/Kg	✳	02/22/23 19:09	02/24/23 03:18	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Date Collected: 02/21/23 14:30

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 65.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		56 - 125	02/22/23 19:09	02/24/23 03:18	1
Dibromofluoromethane (Surr)	101		41 - 138	02/22/23 19:09	02/24/23 03:18	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/22/23 19:09	02/24/23 03:18	1
1,2-Dichloroethane-d4 (Surr)	111		58 - 125	02/22/23 19:09	02/24/23 03:18	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.76	0.26	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
bis (2-chloroisopropyl) ether	ND		1.5	0.15	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4,5-Trichlorophenol	ND		2.3	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4,6-Trichlorophenol	ND		2.3	0.98	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4-Dichlorophenol	ND		2.3	0.67	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4-Dimethylphenol	ND		2.3	0.61	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4-Dinitrophenol	ND		5.0	2.2	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,4-Dinitrotoluene	ND		3.1	0.95	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2,6-Dinitrotoluene	ND		3.1	0.86	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Chloronaphthalene	ND		0.76	0.21	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Chlorophenol	ND		0.76	0.15	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Methylnaphthalene	0.88		0.23	0.030	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Methylphenol	ND		3.1	0.47	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Nitroaniline	ND		3.1	0.61	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
2-Nitrophenol	ND		0.76	0.20	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
3,3'-Dichlorobenzidine	ND		1.5	0.66	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
3-Nitroaniline	ND		3.1	0.75	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4,6-Dinitro-2-methylphenol	ND		5.0	1.2	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Bromophenyl phenyl ether	ND		0.76	0.21	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Chloro-3-methylphenol	ND		2.3	0.69	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Chloroaniline	ND		2.3	0.46	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Chlorophenyl phenyl ether	ND		0.76	0.21	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Nitroaniline	ND		3.1	0.92	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
4-Nitrophenol	ND		5.0	1.4	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Acenaphthene	0.052	J	0.23	0.044	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Acenaphthylene	0.065	J	0.23	0.061	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Acetophenone	ND		1.5	0.17	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Anthracene	0.15	J	0.23	0.037	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Atrazine	ND		3.1	0.55	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzaldehyde	ND		1.5	0.35	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzo[a]anthracene	0.63		0.23	0.052	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzo[a]pyrene	0.87		0.23	0.14	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzo[b]fluoranthene	1.7		0.23	0.099	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzo[g,h,i]perylene	0.33		0.23	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Benzo[k]fluoranthene	0.57		0.23	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Bis(2-chloroethoxy)methane	ND		1.5	0.18	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Bis(2-chloroethyl)ether	ND		1.5	0.18	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Bis(2-ethylhexyl) phthalate	0.86	J	1.1	0.78	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Butyl benzyl phthalate	ND		1.1	0.34	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Caprolactam	ND		5.0	1.1	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Carbazole	ND		0.76	0.29	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Chrysene	0.84		0.23	0.023	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10
Dibenz(a,h)anthracene	ND		0.23	0.11	mg/Kg	☆	02/23/23 08:32	02/25/23 16:55	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Date Collected: 02/21/23 14:30

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 65.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.30	J	0.76	0.20	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Diethyl phthalate	ND		1.1	0.47	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Dimethyl phthalate	ND		1.1	0.21	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Di-n-butyl phthalate	ND		1.1	0.77	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Di-n-octyl phthalate	ND		1.1	0.43	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Fluoranthene	1.2		0.23	0.068	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Fluorene	0.063	J	0.23	0.042	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Hexachlorobenzene	ND		0.23	0.044	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Hexachlorobutadiene	ND		0.76	0.18	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Hexachlorocyclopentadiene	ND		5.0	0.95	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Hexachloroethane	ND		0.76	0.14	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Indeno[1,2,3-cd]pyrene	0.31		0.23	0.11	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Isophorone	ND		0.76	0.18	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
N-Nitrosodi-n-propylamine	ND		0.76	0.17	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
N-Nitrosodiphenylamine	ND		0.76	0.18	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Naphthalene	0.56		0.23	0.037	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Nitrobenzene	ND		1.5	0.20	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Pentachlorophenol	ND		2.3	0.89	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Phenanthrene	0.77		0.23	0.034	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Phenol	ND		0.76	0.12	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
Pyrene	1.1		0.23	0.033	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10
3 & 4 Methylphenol	ND		6.1	0.44	mg/Kg	✱	02/23/23 08:32	02/25/23 16:55	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	100		46 - 137	02/23/23 08:32	02/25/23 16:55	10
Phenol-d5 (Surr)	93		26 - 120	02/23/23 08:32	02/25/23 16:55	10
Nitrobenzene-d5 (Surr)	70		25 - 120	02/23/23 08:32	02/25/23 16:55	10
2-Fluorophenol (Surr)	72		20 - 120	02/23/23 08:32	02/25/23 16:55	10
2-Fluorobiphenyl (Surr)	91		34 - 120	02/23/23 08:32	02/25/23 16:55	10
2,4,6-Tribromophenol (Surr)	103		10 - 120	02/23/23 08:32	02/25/23 16:55	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.11		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 12:00	1
Barium	0.35	J B	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 12:00	1
Cadmium	0.0022	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 12:00	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 12:00	1
Lead	0.035	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 12:00	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 12:00	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 12:00	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	65.9		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	34.1		0.1	0.1	%			02/22/23 13:18	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 18:32	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 18:32	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 18:32	1
Benzene	ND		0.025	0.00042	mg/L			02/23/23 18:32	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 18:32	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 18:32	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:32	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:32	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/23/23 18:32	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120					02/23/23 18:32	1
Dibromofluoromethane (Surr)	97		71 - 121					02/23/23 18:32	1
4-Bromofluorobenzene (Surr)	112		80 - 120					02/23/23 18:32	1
1,2-Dichloroethane-d4 (Surr)	93		76 - 120					02/23/23 18:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 19:22	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 19:22	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 19:22	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 19:22	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 19:22	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 19:22	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 19:22	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 19:22	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 19:22	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 19:22	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 19:22	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 19:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	114		46 - 137				02/23/23 12:44	02/24/23 19:22	1
Phenol-d5 (Surr)	66		26 - 120				02/23/23 12:44	02/24/23 19:22	1
Nitrobenzene-d5 (Surr)	77		24 - 120				02/23/23 12:44	02/24/23 19:22	1
2-Fluorophenol (Surr)	76		19 - 120				02/23/23 12:44	02/24/23 19:22	1
2-Fluorobiphenyl (Surr)	97		33 - 120				02/23/23 12:44	02/24/23 19:22	1
2,4,6-Tribromophenol (Surr)	104		10 - 120				02/23/23 12:44	02/24/23 19:22	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 12:04	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 12:04	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 12:04	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 12:04	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 12:04	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 12:04	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 12:04	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		10 - 145	02/23/23 12:51	02/24/23 12:04	1
DCB Decachlorobiphenyl	74		10 - 145	02/23/23 12:51	02/24/23 12:04	1
Tetrachloro-m-xylene	62		10 - 123	02/23/23 12:51	02/24/23 12:04	1
Tetrachloro-m-xylene	64		10 - 123	02/23/23 12:51	02/24/23 12:04	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 07:11	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136	02/24/23 19:47	02/27/23 07:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	74.1		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	25.9		0.1	0.1	%			02/22/23 13:18	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 74.1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		69	35	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1221	ND		69	42	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1232	ND		69	29	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1242	ND		69	26	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1248	ND		69	24	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1254	ND		69	29	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1260	ND		69	29	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1262	ND		69	31	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Aroclor-1268	ND		69	22	ug/Kg	✳	02/24/23 09:04	02/24/23 13:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	98		10 - 149				02/24/23 09:04	02/24/23 13:10	1
DCB Decachlorobiphenyl	119		10 - 174				02/24/23 09:04	02/24/23 13:10	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.76	0.25	ng/g	✳	02/24/23 17:55	02/27/23 15:10	1
Perfluorooctanesulfonic acid	0.78		0.76	0.25	ng/g	✳	02/24/23 17:55	02/27/23 15:10	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	76		26 - 159				02/24/23 17:55	02/27/23 15:10	1
13C8 PFOS	80		41 - 154				02/24/23 17:55	02/27/23 15:10	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
2-Hexanone	ND		1.0	0.26	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Acetone	2.6		1.0	0.24	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Benzene	0.091	J	0.25	0.042	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Bromoform	ND		0.25	0.23	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Bromomethane	ND		0.25	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Carbon disulfide	ND		0.25	0.11	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Chlorobenzene	ND		0.25	0.035	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Chloroethane	ND		0.25	0.15	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Chloroform	ND		0.25	0.054	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Chloromethane	ND		0.25	0.066	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Cyclohexane	ND		0.50	0.16	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Ethylbenzene	ND		0.25	0.047	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Methyl acetate	0.27	J	1.2	0.17	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Methylcyclohexane	0.11	J	0.50	0.066	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Methylene Chloride	ND		0.50	0.38	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Styrene	ND		0.25	0.052	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Toluene	ND		0.25	0.24	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
trans-1,3-Dichloropropene	ND		0.25	0.10	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Trichloroethene	ND		0.25	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Vinyl chloride	ND		0.25	0.12	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1
Xylenes, Total	ND		0.50	0.091	mg/Kg	✱	02/22/23 19:09	02/24/23 03:43	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/22/23 19:09	02/24/23 03:43	1
Dibromofluoromethane (Surr)	94		41 - 138	02/22/23 19:09	02/24/23 03:43	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/22/23 19:09	02/24/23 03:43	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125	02/22/23 19:09	02/24/23 03:43	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 18:56	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 18:56	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 18:56	1
Benzene	ND		0.025	0.00042	mg/L			02/23/23 18:56	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 18:56	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 18:56	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:56	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 18:56	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/23/23 18:56	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/23/23 18:56	1
Dibromofluoromethane (Surr)	95		71 - 121		02/23/23 18:56	1
4-Bromofluorobenzene (Surr)	113		80 - 120		02/23/23 18:56	1
1,2-Dichloroethane-d4 (Surr)	92		76 - 120		02/23/23 18:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.1	0.36	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
bis (2-chloroisopropyl) ether	ND		2.1	0.21	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4,5-Trichlorophenol	ND		3.2	1.5	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4,6-Trichlorophenol	ND		3.2	1.4	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4-Dichlorophenol	ND		3.2	0.93	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4-Dimethylphenol	ND		3.2	0.85	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4-Dinitrophenol	ND		7.0	3.0	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,4-Dinitrotoluene	ND		4.2	1.3	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2,6-Dinitrotoluene	ND		4.2	1.2	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Chloronaphthalene	ND		1.1	0.30	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Chlorophenol	ND		1.1	0.21	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Methylnaphthalene	0.29	J	0.32	0.041	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Methylphenol	ND		4.2	0.66	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Nitroaniline	ND		4.2	0.85	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
2-Nitrophenol	ND		1.1	0.28	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
3,3'-Dichlorobenzidine	ND		2.1	0.91	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
3-Nitroaniline	ND		4.2	1.0	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4,6-Dinitro-2-methylphenol	ND		7.0	1.7	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Bromophenyl phenyl ether	ND		1.1	0.30	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Chloro-3-methylphenol	ND		3.2	0.95	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Chloroaniline	ND		3.2	0.63	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Chlorophenyl phenyl ether	ND		1.1	0.30	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Nitroaniline	ND		4.2	1.3	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
4-Nitrophenol	ND		7.0	2.0	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20
Acenaphthene	0.32		0.32	0.061	mg/Kg	✳	02/23/23 08:32	02/25/23 13:02	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND		0.32	0.085	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Acetophenone	ND		2.1	0.23	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Anthracene	0.84		0.32	0.051	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Atrazine	ND		4.2	0.76	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzaldehyde	ND		2.1	0.49	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzo[a]anthracene	4.7		0.32	0.072	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzo[a]pyrene	4.8		0.32	0.20	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzo[b]fluoranthene	8.5		0.32	0.14	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzo[g,h,i]perylene	2.0		0.32	0.15	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Benzo[k]fluoranthene	3.0		0.32	0.15	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Bis(2-chloroethoxy)methane	ND		2.1	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Bis(2-chloroethyl)ether	ND		2.1	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Bis(2-ethylhexyl) phthalate	ND		1.5	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Butyl benzyl phthalate	1.2 J		1.5	0.47	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Caprolactam	ND		7.0	1.6	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Carbazole	1.6		1.1	0.40	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Chrysene	7.2		0.32	0.032	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Dibenz(a,h)anthracene	0.59		0.32	0.15	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Dibenzofuran	ND		1.1	0.28	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Diethyl phthalate	ND		1.5	0.66	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Dimethyl phthalate	ND		1.5	0.30	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Di-n-butyl phthalate	ND		1.5	1.1	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Di-n-octyl phthalate	ND		1.5	0.59	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Fluoranthene	15		0.32	0.094	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Fluorene	0.41		0.32	0.058	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Hexachlorobenzene	ND		0.32	0.060	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Hexachlorobutadiene	ND		1.1	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Hexachlorocyclopentadiene	ND		7.0	1.3	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Hexachloroethane	ND		1.1	0.19	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Indeno[1,2,3-cd]pyrene	2.0		0.32	0.16	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Isophorone	ND		1.1	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
N-Nitrosodi-n-propylamine	ND		1.1	0.23	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
N-Nitrosodiphenylamine	ND		1.1	0.25	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Naphthalene	0.23 J		0.32	0.051	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Nitrobenzene	ND		2.1	0.28	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Pentachlorophenol	ND		3.2	1.2	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Phenanthrene	6.9		0.32	0.047	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Phenol	ND		1.1	0.17	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
Pyrene	12		0.32	0.045	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20
3 & 4 Methylphenol	ND		8.5	0.61	mg/Kg	✱	02/23/23 08:32	02/25/23 13:02	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	79		46 - 137	02/23/23 08:32	02/25/23 13:02	20
Phenol-d5 (Surr)	90		26 - 120	02/23/23 08:32	02/25/23 13:02	20
Nitrobenzene-d5 (Surr)	69		25 - 120	02/23/23 08:32	02/25/23 13:02	20
2-Fluorophenol (Surr)	72		20 - 120	02/23/23 08:32	02/25/23 13:02	20
2-Fluorobiphenyl (Surr)	81		34 - 120	02/23/23 08:32	02/25/23 13:02	20
2,4,6-Tribromophenol (Surr)	115		10 - 120	02/23/23 08:32	02/25/23 13:02	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 19:47	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 19:47	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 19:47	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 19:47	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 19:47	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 19:47	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 19:47	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 19:47	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 19:47	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 19:47	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 19:47	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 19:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	119		46 - 137	02/23/23 12:44	02/24/23 19:47	1
Phenol-d5 (Surr)	62		26 - 120	02/23/23 12:44	02/24/23 19:47	1
Nitrobenzene-d5 (Surr)	76		24 - 120	02/23/23 12:44	02/24/23 19:47	1
2-Fluorophenol (Surr)	72		19 - 120	02/23/23 12:44	02/24/23 19:47	1
2-Fluorobiphenyl (Surr)	96		33 - 120	02/23/23 12:44	02/24/23 19:47	1
2,4,6-Tribromophenol (Surr)	102		10 - 120	02/23/23 12:44	02/24/23 19:47	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 12:21	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 12:21	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 12:21	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 12:21	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 12:21	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 12:21	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	69		10 - 145	02/23/23 12:51	02/24/23 12:21	1
DCB Decachlorobiphenyl	67		10 - 145	02/23/23 12:51	02/24/23 12:21	1
Tetrachloro-m-xylene	53		10 - 123	02/23/23 12:51	02/24/23 12:21	1
Tetrachloro-m-xylene	60		10 - 123	02/23/23 12:51	02/24/23 12:21	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		54	27	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1221	ND		54	33	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1232	ND		54	23	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1242	ND		54	21	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1248	ND		54	18	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1254	ND		54	23	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1260	ND		54	23	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1262	ND		54	24	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1
Aroclor-1268	ND		54	17	ug/Kg	✱	02/24/23 09:04	02/24/23 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	104		10 - 149	02/24/23 09:04	02/24/23 13:27	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		10 - 174	02/24/23 09:04	02/24/23 13:27	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 07:38	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 07:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	70		26 - 136	02/24/23 19:47	02/27/23 07:38	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 12:45	1
Barium	0.48	J	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 12:45	1
Cadmium	0.0017	J B	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 12:45	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 12:45	1
Lead	0.0080	J	0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 12:45	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 12:45	1
Silver	0.00083	J	0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 12:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	95.1		0.1	0.1	%			02/22/23 13:18	1
Percent Solids (EPA Moisture)	95.1		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	4.9		0.1	0.1	%			02/22/23 13:18	1
Percent Moisture (EPA Moisture)	4.9		0.1	0.1	%			02/22/23 13:18	1

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180684-1	WC-WS-NORTH-01 (4-5)	107	97	106	108
240-180684-1	WC-WS-NORTH-01 (4-5)	107	105	108	112
240-180684-2	WC-WS-NORTH-02 (6-7)	107	95	107	105
240-180684-3	WC-WS-NORTH-03 (7-8)	108	95	107	104
240-180684-4	WC-WS-NORTH-04 (4-5)	106	94	106	104
240-180684-5	WC-WS-NORTH-05 (5-6)	107	105	106	109
240-180684-7	WC-WS-NORTH-06 (5-6)	107	96	105	109
240-180684-8	WC-WS-NORTH-07 (3-4)	108	95	105	105
240-180684-8	WC-WS-NORTH-07 (3-4)	107	101	107	111
240-180684-9	WC-WS-NORTH-08 (3-4)	106	98	105	107
240-180684-9	WC-WS-NORTH-08 (3-4)	107	99	107	110
240-180684-10	WC-WS-NORTH-09 (3-4)	108	97	107	112
240-180684-10	WC-WS-NORTH-09 (3-4)	106	106	106	117
240-180684-11	WC-WS-NORTH-10 (2-3)	106	100	106	110
240-180684-11	WC-WS-NORTH-10 (2-3)	107	96	105	110
240-180684-13	WC-SB2650-N. DITCH	106	95	105	108
240-180684-13	WC-SB2650-N. DITCH	106	104	107	111
240-180684-14	WC-SB1692-N. DITCH	105	98	106	110
240-180684-14	WC-SB1692-N. DITCH	107	101	108	111
240-180684-15	WC-SB2598-N. DITCH	105	96	105	106
240-180684-16	WC-SB1852-N. DITCH	106	95	106	106
240-180684-17	WC-SB1865-N. DITCH	105	102	105	108
240-180684-17	WC-SB1865-N. DITCH	118	96	138 *3	85
240-180684-19	WC-SB2621-N. DITCH	106	96	105	110
240-180684-19	WC-SB2621-N. DITCH	107	103	107	113
240-180684-20	WC-SB1634-N. DITCH	105	94	104	105
240-180684-20	WC-SB1634-N. DITCH	107	97	107	110
240-180684-20	WC-SB1634-N. DITCH	105	89	132	80
240-180684-21	WC-SB2624-N. DITCH	105	94	106	104
240-180684-21	WC-SB2624-N. DITCH	105	99	106	112
240-180684-22	WC-SB2474-N. DITCH	107	100	105	111
240-180684-22	WC-SB2474-N. DITCH	105	98	103	110
240-180684-23	WC-SB2405-N. DITCH	108	101	105	111
240-180684-25	WC-RT1538A-ST. SWEEPINGS	105	94	105	107
LCS 240-562918/2-A	Lab Control Sample	108	105	107	105
LCS 240-562940/2-A	Lab Control Sample	109	104	107	105
LCS 240-563078/2-A	Lab Control Sample	111	108	109	104
LCS 240-563382/4	Lab Control Sample	87	82	97	76
LCS 240-563458/4	Lab Control Sample	99	96	110	84
MB 240-562918/1-A	Method Blank	105	95	105	106
MB 240-562940/1-A	Method Blank	105	95	106	106
MB 240-563078/1-A	Method Blank	109	97	109	108
MB 240-563391/1-A	Method Blank	94	85	102	76
MB 240-563434/1-A	Method Blank	98	93	109	81

Surrogate Legend

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-563142/10	Lab Control Sample	99	98	114	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180684-6	WC-WS-NORTH-COMP (1-5)	98	95	112	93
240-180684-12	WC-WS-NORTH-COMP (6-10)	101	96	115	93
240-180684-18	WC-COMP1-N. DITCH	99	98	115	95
240-180684-24	WC-COMP2-N. DITCH	99	97	112	93
240-180684-25	WC-RT1538A-ST. SWEEPINGS	100	95	113	92
LB 240-563082/1-A MB	Method Blank	100	95	116	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180684-1	WC-WS-NORTH-01 (4-5)	108	86	85	79	85	55
240-180684-2	WC-WS-NORTH-02 (6-7)	67	46	43	45	58	62
240-180684-3	WC-WS-NORTH-03 (7-8)	64	58	57	46	62	45
240-180684-4	WC-WS-NORTH-04 (4-5)	71	60	63	56	61	44
240-180684-5	WC-WS-NORTH-05 (5-6)	55	48	48	38	48	27
240-180684-7	WC-WS-NORTH-06 (5-6)	21 S1-	17 S1-	17 S1-	18 S1-	20 S1-	30
240-180684-8	WC-WS-NORTH-07 (3-4)	29 S1-	25 S1-	23 S1-	25	30 S1-	32
240-180684-9	WC-WS-NORTH-08 (3-4)	57	58	61	56	58	42
240-180684-10	WC-WS-NORTH-09 (3-4)	40 S1-	41	45	41	41	32
240-180684-11	WC-WS-NORTH-10 (2-3)	65	48	45	47	59	65
240-180684-13	WC-SB2650-N. DITCH	108	107	78	78	97	118
240-180684-13 MS	WC-SB2650-N. DITCH	114	111	85	76	109	134 S1+
240-180684-13 MSD	WC-SB2650-N. DITCH	103	101	85	88	96	127 S1+
240-180684-14	WC-SB1692-N. DITCH	111	100	83	82	95	125 S1+
240-180684-15	WC-SB2598-N. DITCH	97	88	78	66	96	99
240-180684-16	WC-SB1852-N. DITCH	102	94	71	72	87	126 S1+
240-180684-17	WC-SB1865-N. DITCH	89	86	72	71	84	112
240-180684-19	WC-SB2621-N. DITCH	93	99	82	85	91	0 S1-

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180684-19 - RA	WC-SB2621-N. DITCH	104	106	84	91	95	196 S1+
240-180684-20	WC-SB1634-N. DITCH	90	90	71	71	86	107
240-180684-21 - RA	WC-SB2624-N. DITCH	95	96	79	59	85	0 S1-
240-180684-21	WC-SB2624-N. DITCH	103	102	79	78	100	193 S1+
240-180684-22	WC-SB2474-N. DITCH	109	112	83	89	98	90
240-180684-23	WC-SB2405-N. DITCH	100	93	70	72	91	103
240-180684-25	WC-RT1538A-ST. SWEEPINGS	79	90	69	72	81	115
LCS 240-563018/24-A	Lab Control Sample	105	82	79	80	83	74
LCS 240-563018/25-A	Lab Control Sample	101	70	72	68	68	45
LCS 240-563018/26-A	Lab Control Sample	119	92	92	73	92	34
LCS 240-563130/2-A	Lab Control Sample	115	89	86	79	92	89
LCS 240-563130/3-A	Lab Control Sample	106	73	73	53	77	31
LCS 240-563436/23-A	Lab Control Sample	115	67	60	68	83	103
LCS 240-563436/24-A	Lab Control Sample	104	38	33	36	46	31
MB 240-563018/23-A	Method Blank	104	80	83	73	80	40
MB 240-563130/1-A	Method Blank	113	85	79	67	84	50
MB 240-563436/22-A	Method Blank	100	58	52	52	71	48

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-563202/14-A	Lab Control Sample	119	64	74	73	98	108
MB 240-563202/13-A	Method Blank	111	59	73	69	94	99

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180684-6	WC-WS-NORTH-COMP (1-5)	119	61	72	70	99	103
240-180684-12	WC-WS-NORTH-COMP (6-10)	106	57	64	64	85	90
240-180684-18	WC-COMP1-N. DITCH	118	61	73	70	100	109

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180684-24	WC-COMP2-N. DITCH	114	66	77	76	97	104
240-180684-25	WC-RT1538A-ST. SWEEPINGS	119	62	76	72	96	102

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-563205/11-A	Lab Control Sample	84	82	69	84
MB 240-563205/10-A	Method Blank	86	88	76	94

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180684-6	WC-WS-NORTH-COMP (1-5)	77	80	61	67
240-180684-12	WC-WS-NORTH-COMP (6-10)	73	75	61	70
240-180684-18	WC-COMP1-N. DITCH	76	79	61	65
240-180684-24	WC-COMP2-N. DITCH	78	74	62	64
240-180684-25	WC-RT1538A-ST. SWEEPINGS	69	67	53	60

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-180684-6	WC-WS-NORTH-COMP (1-5)	95	95 p
240-180684-6 MS	WC-WS-NORTH-COMP (1-5)	88	96 p
240-180684-6 MSD	WC-WS-NORTH-COMP (1-5)	88	103 p
240-180684-12	WC-WS-NORTH-COMP (6-10)	69	75 p
240-180684-18	WC-COMP1-N. DITCH	95	108
240-180684-24	WC-COMP2-N. DITCH	98	119
240-180684-25	WC-RT1538A-ST. SWEEPINGS	104	83

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (10-149)	DCBP2 (10-174)
LCS 240-562981/2-A	Lab Control Sample	109	102
LCS 240-563290/2-A	Lab Control Sample	111	121
MB 240-562981/1-A	Method Blank	79	70
MB 240-563290/1-A	Method Blank	113	146

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
LCS 410-347942/2-A	Lab Control Sample	73
MB 410-347942/1-A	Method Blank	61

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
240-180684-6	WC-WS-NORTH-COMP (1-5)	70
240-180684-25	WC-RT1538A-ST. SWEEPINGS	70

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
240-180684-12	WC-WS-NORTH-COMP (6-10)	62
240-180684-18	WC-COMP1-N. DITCH	72
240-180684-24	WC-COMP2-N. DITCH	65

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Acetone	ND		1.0	0.24	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Benzene	ND		0.25	0.042	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Bromoform	ND		0.25	0.23	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Chloroform	ND		0.25	0.054	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Styrene	ND		0.25	0.052	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Toluene	ND		0.25	0.24	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 13:30	02/23/23 17:18	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/21/23 13:30	02/23/23 17:18	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562918/1-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562918

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		56 - 125	02/21/23 13:30	02/23/23 17:18	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 13:30	02/23/23 17:18	1
4-Bromofluorobenzene (Surr)	105		41 - 143	02/21/23 13:30	02/23/23 17:18	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125	02/21/23 13:30	02/23/23 17:18	1

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.24		mg/Kg		99	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.41		mg/Kg		113	64 - 148
1,1,2-Trichloroethane	1.25	1.31		mg/Kg		105	79 - 120
1,1-Dichloroethane	1.25	1.27		mg/Kg		101	74 - 121
1,1-Dichloroethene	1.25	1.32		mg/Kg		106	68 - 141
1,2,4-Trichlorobenzene	1.25	1.33		mg/Kg		106	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.909		mg/Kg		73	52 - 133
Ethylene Dibromide	1.25	1.30		mg/Kg		104	80 - 121
1,2-Dichlorobenzene	1.25	1.38		mg/Kg		111	73 - 120
1,2-Dichloroethane	1.25	1.30		mg/Kg		104	71 - 123
1,2-Dichloropropane	1.25	1.28		mg/Kg		102	76 - 126
1,3-Dichlorobenzene	1.25	1.36		mg/Kg		109	73 - 120
1,4-Dichlorobenzene	1.25	1.37		mg/Kg		110	74 - 120
2-Butanone (MEK)	2.50	2.54		mg/Kg		102	63 - 142
2-Hexanone	2.50	2.48		mg/Kg		99	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.48		mg/Kg		99	62 - 142
Acetone	2.50	2.91		mg/Kg		116	58 - 160
Benzene	1.25	1.32		mg/Kg		105	76 - 121
Dichlorobromomethane	1.25	1.14		mg/Kg		91	71 - 138
Bromoform	1.25	0.941		mg/Kg		75	57 - 140
Bromomethane	1.25	0.731		mg/Kg		58	10 - 171
Carbon disulfide	1.25	1.04		mg/Kg		83	43 - 152
Carbon tetrachloride	1.25	1.11		mg/Kg		89	64 - 144
Chlorobenzene	1.25	1.35		mg/Kg		108	80 - 120
Chloroethane	1.25	0.610		mg/Kg		49	11 - 164
Chloroform	1.25	1.30		mg/Kg		104	78 - 120
Chloromethane	1.25	1.35		mg/Kg		108	41 - 142
cis-1,2-Dichloroethene	1.25	1.36		mg/Kg		109	78 - 124
cis-1,3-Dichloropropene	1.25	1.19		mg/Kg		96	70 - 133
Cyclohexane	1.25	1.35		mg/Kg		108	65 - 137
Chlorodibromomethane	1.25	1.07		mg/Kg		85	68 - 131
Dichlorodifluoromethane	1.25	1.57		mg/Kg		125	21 - 150
Ethylbenzene	1.25	1.36		mg/Kg		109	80 - 120
Isopropylbenzene	1.25	1.38		mg/Kg		110	80 - 130
Methyl acetate	2.50	2.35		mg/Kg		94	60 - 133
Methyl tert-butyl ether	1.25	1.32		mg/Kg		106	70 - 130
Methylcyclohexane	1.25	1.34		mg/Kg		107	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562918/2-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	1.38		mg/Kg		111	71 - 124
Styrene	1.25	1.38		mg/Kg		110	75 - 140
Tetrachloroethene	1.25	1.45		mg/Kg		116	76 - 127
Toluene	1.25	1.32		mg/Kg		106	80 - 120
trans-1,2-Dichloroethene	1.25	1.31		mg/Kg		105	76 - 130
trans-1,3-Dichloropropene	1.25	1.24		mg/Kg		99	61 - 121
Trichloroethene	1.25	1.35		mg/Kg		108	74 - 130
Trichlorofluoromethane	1.25	1.02		mg/Kg		81	50 - 154
Vinyl chloride	1.25	1.41		mg/Kg		113	49 - 146
Xylenes, Total	2.50	2.70		mg/Kg		108	80 - 122
m-Xylene & p-Xylene	1.25	1.35		mg/Kg		108	80 - 122
o-Xylene	1.25	1.35		mg/Kg		108	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	108		56 - 125
Dibromofluoromethane (Surr)	105		41 - 138
4-Bromofluorobenzene (Surr)	107		41 - 143
1,2-Dichloroethane-d4 (Surr)	105		58 - 125

Lab Sample ID: MB 240-562940/1-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Acetone	ND		1.0	0.24	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Benzene	ND		0.25	0.042	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Bromoform	ND		0.25	0.23	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/21/23 19:38	02/23/23 18:53	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-562940/1-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Chloroform	ND		0.25	0.054	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Styrene	ND		0.25	0.052	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Toluene	ND		0.25	0.24	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/21/23 19:38	02/23/23 18:53	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/21/23 19:38	02/23/23 18:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		56 - 125	02/21/23 19:38	02/23/23 18:53	1
Dibromofluoromethane (Surr)	95		41 - 138	02/21/23 19:38	02/23/23 18:53	1
4-Bromofluorobenzene (Surr)	106		41 - 143	02/21/23 19:38	02/23/23 18:53	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125	02/21/23 19:38	02/23/23 18:53	1

Lab Sample ID: LCS 240-562940/2-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.25	1.25		mg/Kg		100	74 - 136
1,1,2,2-Tetrachloroethane	1.25	1.15		mg/Kg		92	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.36		mg/Kg		108	64 - 148
1,1,2-Trichloroethane	1.25	1.24		mg/Kg		99	79 - 120
1,1-Dichloroethane	1.25	1.22		mg/Kg		97	74 - 121
1,1-Dichloroethene	1.25	1.26		mg/Kg		101	68 - 141
1,2,4-Trichlorobenzene	1.25	1.27		mg/Kg		102	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.831		mg/Kg		66	52 - 133
Ethylene Dibromide	1.25	1.25		mg/Kg		100	80 - 121
1,2-Dichlorobenzene	1.25	1.33		mg/Kg		107	73 - 120
1,2-Dichloroethane	1.25	1.24		mg/Kg		99	71 - 123
1,2-Dichloropropane	1.25	1.22		mg/Kg		98	76 - 126

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-562940/2-A
Matrix: Solid
Analysis Batch: 563220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	1.25	1.29		mg/Kg		103	73 - 120
1,4-Dichlorobenzene	1.25	1.32		mg/Kg		105	74 - 120
2-Butanone (MEK)	2.50	2.29		mg/Kg		92	63 - 142
2-Hexanone	2.50	2.36		mg/Kg		94	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.37		mg/Kg		95	62 - 142
Acetone	2.50	2.83		mg/Kg		113	58 - 160
Benzene	1.25	1.27		mg/Kg		102	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		86	71 - 138
Bromoform	1.25	0.880		mg/Kg		70	57 - 140
Bromomethane	1.25	0.737		mg/Kg		59	10 - 171
Carbon disulfide	1.25	0.969		mg/Kg		78	43 - 152
Carbon tetrachloride	1.25	1.04		mg/Kg		83	64 - 144
Chlorobenzene	1.25	1.29		mg/Kg		103	80 - 120
Chloroethane	1.25	0.622		mg/Kg		50	11 - 164
Chloroform	1.25	1.24		mg/Kg		99	78 - 120
Chloromethane	1.25	1.42		mg/Kg		113	41 - 142
cis-1,2-Dichloroethene	1.25	1.27		mg/Kg		102	78 - 124
cis-1,3-Dichloropropene	1.25	1.13		mg/Kg		91	70 - 133
Cyclohexane	1.25	1.26		mg/Kg		100	65 - 137
Chlorodibromomethane	1.25	0.993		mg/Kg		79	68 - 131
Dichlorodifluoromethane	1.25	1.55		mg/Kg		124	21 - 150
Ethylbenzene	1.25	1.29		mg/Kg		103	80 - 120
Isopropylbenzene	1.25	1.31		mg/Kg		105	80 - 130
Methyl acetate	2.50	2.16		mg/Kg		86	60 - 133
Methyl tert-butyl ether	1.25	1.24		mg/Kg		100	70 - 130
Methylcyclohexane	1.25	1.28		mg/Kg		102	70 - 138
Methylene Chloride	1.25	1.37		mg/Kg		110	71 - 124
Styrene	1.25	1.32		mg/Kg		106	75 - 140
Tetrachloroethene	1.25	1.39		mg/Kg		111	76 - 127
Toluene	1.25	1.26		mg/Kg		101	80 - 120
trans-1,2-Dichloroethene	1.25	1.20		mg/Kg		96	76 - 130
trans-1,3-Dichloropropene	1.25	1.18		mg/Kg		94	61 - 121
Trichloroethene	1.25	1.26		mg/Kg		101	74 - 130
Trichlorofluoromethane	1.25	1.02		mg/Kg		82	50 - 154
Vinyl chloride	1.25	1.43		mg/Kg		114	49 - 146
Xylenes, Total	2.50	2.61		mg/Kg		104	80 - 122
m-Xylene & p-Xylene	1.25	1.33		mg/Kg		106	80 - 122
o-Xylene	1.25	1.28		mg/Kg		102	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	109		56 - 125
Dibromofluoromethane (Surr)	104		41 - 138
4-Bromofluorobenzene (Surr)	107		41 - 143
1,2-Dichloroethane-d4 (Surr)	105		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563078/1-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563078

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Acetone	ND		1.0	0.24	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Benzene	ND		0.25	0.042	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Bromoform	ND		0.25	0.23	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Chloroform	ND		0.25	0.054	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Styrene	ND		0.25	0.052	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Toluene	ND		0.25	0.24	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/22/23 15:14	02/22/23 16:21	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/22/23 15:14	02/22/23 16:21	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563078/1-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563078

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	109		56 - 125	02/22/23 15:14	02/22/23 16:21	1
Dibromofluoromethane (Surr)	97		41 - 138	02/22/23 15:14	02/22/23 16:21	1
4-Bromofluorobenzene (Surr)	109		41 - 143	02/22/23 15:14	02/22/23 16:21	1
1,2-Dichloroethane-d4 (Surr)	108		58 - 125	02/22/23 15:14	02/22/23 16:21	1

Lab Sample ID: LCS 240-563078/2-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.19		mg/Kg		95	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.31		mg/Kg		105	64 - 148
1,1,2-Trichloroethane	1.25	1.26		mg/Kg		101	79 - 120
1,1-Dichloroethane	1.25	1.23		mg/Kg		99	74 - 121
1,1-Dichloroethene	1.25	1.26		mg/Kg		100	68 - 141
1,2,4-Trichlorobenzene	1.25	1.30		mg/Kg		104	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.923		mg/Kg		74	52 - 133
Ethylene Dibromide	1.25	1.23		mg/Kg		98	80 - 121
1,2-Dichlorobenzene	1.25	1.32		mg/Kg		106	73 - 120
1,2-Dichloroethane	1.25	1.22		mg/Kg		98	71 - 123
1,2-Dichloropropane	1.25	1.19		mg/Kg		96	76 - 126
1,3-Dichlorobenzene	1.25	1.33		mg/Kg		107	73 - 120
1,4-Dichlorobenzene	1.25	1.35		mg/Kg		108	74 - 120
2-Butanone (MEK)	2.50	2.39		mg/Kg		96	63 - 142
2-Hexanone	2.50	2.37		mg/Kg		95	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.35		mg/Kg		94	62 - 142
Acetone	2.50	2.64		mg/Kg		106	58 - 160
Benzene	1.25	1.30		mg/Kg		104	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		86	71 - 138
Bromoform	1.25	0.883		mg/Kg		71	57 - 140
Bromomethane	1.25	0.674		mg/Kg		54	10 - 171
Carbon disulfide	1.25	0.912		mg/Kg		73	43 - 152
Carbon tetrachloride	1.25	1.07		mg/Kg		86	64 - 144
Chlorobenzene	1.25	1.31		mg/Kg		105	80 - 120
Chloroethane	1.25	0.638		mg/Kg		51	11 - 164
Chloroform	1.25	1.26		mg/Kg		101	78 - 120
Chloromethane	1.25	1.46		mg/Kg		117	41 - 142
cis-1,2-Dichloroethene	1.25	1.27		mg/Kg		102	78 - 124
cis-1,3-Dichloropropene	1.25	1.14		mg/Kg		91	70 - 133
Cyclohexane	1.25	1.27		mg/Kg		101	65 - 137
Chlorodibromomethane	1.25	1.02		mg/Kg		82	68 - 131
Dichlorodifluoromethane	1.25	1.66		mg/Kg		133	21 - 150
Ethylbenzene	1.25	1.33		mg/Kg		106	80 - 120
Isopropylbenzene	1.25	1.37		mg/Kg		110	80 - 130
Methyl acetate	2.50	2.25		mg/Kg		90	60 - 133
Methyl tert-butyl ether	1.25	1.21		mg/Kg		97	70 - 130
Methylcyclohexane	1.25	1.29		mg/Kg		104	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563078/2-A
Matrix: Solid
Analysis Batch: 563073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	1.33		mg/Kg		106	71 - 124
Styrene	1.25	1.36		mg/Kg		109	75 - 140
Tetrachloroethene	1.25	1.41		mg/Kg		113	76 - 127
Toluene	1.25	1.30		mg/Kg		104	80 - 120
trans-1,2-Dichloroethene	1.25	1.26		mg/Kg		101	76 - 130
trans-1,3-Dichloropropene	1.25	1.17		mg/Kg		94	61 - 121
Trichloroethene	1.25	1.31		mg/Kg		105	74 - 130
Trichlorofluoromethane	1.25	1.14		mg/Kg		91	50 - 154
Vinyl chloride	1.25	1.48		mg/Kg		118	49 - 146
Xylenes, Total	2.50	2.64		mg/Kg		106	80 - 122
m-Xylene & p-Xylene	1.25	1.34		mg/Kg		107	80 - 122
o-Xylene	1.25	1.30		mg/Kg		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	111		56 - 125
Dibromofluoromethane (Surr)	108		41 - 138
4-Bromofluorobenzene (Surr)	109		41 - 143
1,2-Dichloroethane-d4 (Surr)	104		58 - 125

Lab Sample ID: LCS 240-563142/10
Matrix: Solid
Analysis Batch: 563142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.07		mg/L		107	74 - 127
1,2-Dichloroethane	1.00	0.894		mg/L		89	72 - 120
2-Butanone (MEK)	2.00	2.09		mg/L		104	68 - 130
Benzene	1.00	1.09		mg/L		109	80 - 121
Carbon tetrachloride	1.00	0.889		mg/L		89	69 - 120
Chlorobenzene	1.00	0.972		mg/L		97	80 - 120
Chloroform	1.00	1.02		mg/L		102	75 - 120
Tetrachloroethene	1.00	0.874		mg/L		87	74 - 120
Trichloroethene	1.00	0.910		mg/L		91	75 - 120
Vinyl chloride	1.00	1.04		mg/L		104	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		71 - 121
4-Bromofluorobenzene (Surr)	114		80 - 120
1,2-Dichloroethane-d4 (Surr)	93		76 - 120

Lab Sample ID: LCS 240-563382/4
Matrix: Solid
Analysis Batch: 563382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	0.0250	0.0258		mg/Kg		103	49 - 146

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563382/4
Matrix: Solid
Analysis Batch: 563382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	87		56 - 125
Dibromofluoromethane (Surr)	82		41 - 138
4-Bromofluorobenzene (Surr)	97		41 - 143
1,2-Dichloroethane-d4 (Surr)	76		58 - 125

Lab Sample ID: MB 240-563391/1-A
Matrix: Solid
Analysis Batch: 563382

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563391

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		02/24/23 21:04	02/25/23 01:42	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	94		56 - 125				02/24/23 21:04	02/25/23 01:42	1
Dibromofluoromethane (Surr)	85		41 - 138				02/24/23 21:04	02/25/23 01:42	1
4-Bromofluorobenzene (Surr)	102		41 - 143				02/24/23 21:04	02/25/23 01:42	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125				02/24/23 21:04	02/25/23 01:42	1

Lab Sample ID: MB 240-563434/1-A
Matrix: Solid
Analysis Batch: 563458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563434

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		02/25/23 14:15	02/26/23 18:43	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	98		56 - 125				02/25/23 14:15	02/26/23 18:43	1
Dibromofluoromethane (Surr)	93		41 - 138				02/25/23 14:15	02/26/23 18:43	1
4-Bromofluorobenzene (Surr)	109		41 - 143				02/25/23 14:15	02/26/23 18:43	1
1,2-Dichloroethane-d4 (Surr)	81		58 - 125				02/25/23 14:15	02/26/23 18:43	1

Lab Sample ID: MB 240-563457/1-A
Matrix: Solid
Analysis Batch: 563458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563457

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		02/26/23 16:41	02/26/23 19:55	1

Lab Sample ID: LCS 240-563458/4
Matrix: Solid
Analysis Batch: 563458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	LCS LCS		Limits	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
		%Recovery								
Vinyl chloride			49 - 146	0.0250	0.0273		mg/Kg		109	
Surrogate	LCS LCS		Limits			D				
	%Recovery	Qualifier								
Toluene-d8 (Surr)	99		56 - 125							
Dibromofluoromethane (Surr)	96		41 - 138							

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563458/4
Matrix: Solid
Analysis Batch: 563458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	110		41 - 143
1,2-Dichloroethane-d4 (Surr)	84		58 - 125

Lab Sample ID: LB 240-563082/1-A MB
Matrix: Solid
Analysis Batch: 563142

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/23/23 16:13	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/23/23 16:13	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/23/23 16:13	1
Benzene	ND		0.025	0.00042	mg/L			02/23/23 16:13	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/23/23 16:13	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/23/23 16:13	1
Chloroform	ND		0.025	0.00047	mg/L			02/23/23 16:13	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/23/23 16:13	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/23/23 16:13	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/23/23 16:13	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		80 - 120		02/23/23 16:13	1
Dibromofluoromethane (Surr)	95		71 - 121		02/23/23 16:13	1
4-Bromofluorobenzene (Surr)	116		80 - 120		02/23/23 16:13	1
1,2-Dichloroethane-d4 (Surr)	93		76 - 120		02/23/23 16:13	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563018/23-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563018

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/22/23 09:34	02/24/23 10:09	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563018/23-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563018

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Atrazine	ND		0.20	0.036	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Carbazole	ND		0.050	0.019	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Isophorone	ND		0.050	0.012	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Phenol	ND		0.050	0.0080	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/22/23 09:34	02/24/23 10:09	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/22/23 09:34	02/24/23 10:09	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	104		46 - 137	02/22/23 09:34	02/24/23 10:09	1
Phenol-d5 (Surr)	80		26 - 120	02/22/23 09:34	02/24/23 10:09	1
Nitrobenzene-d5 (Surr)	83		25 - 120	02/22/23 09:34	02/24/23 10:09	1
2-Fluorophenol (Surr)	73		20 - 120	02/22/23 09:34	02/24/23 10:09	1
2-Fluorobiphenyl (Surr)	80		34 - 120	02/22/23 09:34	02/24/23 10:09	1
2,4,6-Tribromophenol (Surr)	40		10 - 120	02/22/23 09:34	02/24/23 10:09	1

Lab Sample ID: LCS 240-563018/24-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
bis (2-chloroisopropyl) ether	0.667	0.548		mg/Kg		82	38 - 120
2,4,5-Trichlorophenol	0.667	0.545		mg/Kg		82	50 - 120
2,4,6-Trichlorophenol	0.667	0.524		mg/Kg		79	50 - 120
2,4-Dichlorophenol	0.667	0.436		mg/Kg		65	50 - 120
2,4-Dimethylphenol	0.667	0.450		mg/Kg		68	24 - 120
2,4-Dinitrophenol	1.33	0.682		mg/Kg		51	19 - 132
2,4-Dinitrotoluene	0.667	0.606		mg/Kg		91	64 - 120
2,6-Dinitrotoluene	0.667	0.632		mg/Kg		95	62 - 120
2-Chloronaphthalene	0.667	0.491		mg/Kg		74	51 - 120
2-Chlorophenol	0.667	0.451		mg/Kg		68	47 - 120
2-Methylnaphthalene	0.667	0.407		mg/Kg		61	38 - 120
2-Methylphenol	0.667	0.507		mg/Kg		76	45 - 120
2-Nitroaniline	0.667	0.758		mg/Kg		114	57 - 120
2-Nitrophenol	0.667	0.463		mg/Kg		69	51 - 120
3,3'-Dichlorobenzidine	1.33	1.22		mg/Kg		92	27 - 199
3-Nitroaniline	0.667	0.585		mg/Kg		88	41 - 120
4,6-Dinitro-2-methylphenol	1.33	0.946		mg/Kg		71	46 - 126
4-Bromophenyl phenyl ether	0.667	0.534		mg/Kg		80	65 - 120
4-Chloro-3-methylphenol	0.667	0.558		mg/Kg		84	51 - 120
4-Chloroaniline	0.667	0.444		mg/Kg		67	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.523		mg/Kg		78	59 - 120
4-Nitroaniline	0.667	0.651		mg/Kg		98	48 - 128
4-Nitrophenol	1.33	1.39		mg/Kg		104	43 - 120
Acenaphthene	0.667	0.527		mg/Kg		79	52 - 120
Acenaphthylene	0.667	0.515		mg/Kg		77	52 - 120
Acetophenone	0.667	0.510		mg/Kg		76	47 - 120
Anthracene	0.667	0.569		mg/Kg		85	64 - 120
Atrazine	1.33	1.31		mg/Kg		98	71 - 125
Benzaldehyde	1.33	1.05		mg/Kg		79	42 - 120
Benzo[a]anthracene	0.667	0.630		mg/Kg		95	70 - 120
Benzo[a]pyrene	0.667	0.582		mg/Kg		87	63 - 125
Benzo[b]fluoranthene	0.667	0.608		mg/Kg		91	64 - 121
Benzo[g,h,i]perylene	0.667	0.589		mg/Kg		88	62 - 120
Benzo[k]fluoranthene	0.667	0.560		mg/Kg		84	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.493		mg/Kg		74	50 - 120
Bis(2-chloroethyl)ether	0.667	0.489		mg/Kg		73	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.824		mg/Kg		124	63 - 133
Butyl benzyl phthalate	0.667	0.786		mg/Kg		118	66 - 127

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563018/24-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Caprolactam	1.33	1.37		mg/Kg		102	67 - 120
Carbazole	0.667	0.609		mg/Kg		91	61 - 129
Chrysene	0.667	0.593		mg/Kg		89	67 - 120
Dibenz(a,h)anthracene	0.667	0.570		mg/Kg		85	62 - 120
Dibenzofuran	0.667	0.525		mg/Kg		79	55 - 120
Diethyl phthalate	0.667	0.627		mg/Kg		94	61 - 120
Dimethyl phthalate	0.667	0.610		mg/Kg		91	64 - 120
Di-n-butyl phthalate	0.667	0.699		mg/Kg		105	70 - 129
Di-n-octyl phthalate	0.667	0.795		mg/Kg		119	64 - 129
Fluoranthene	0.667	0.567		mg/Kg		85	71 - 124
Fluorene	0.667	0.558		mg/Kg		84	58 - 120
Hexachlorobenzene	0.667	0.524		mg/Kg		79	59 - 120
Hexachlorobutadiene	0.667	0.395		mg/Kg		59	45 - 120
Hexachlorocyclopentadiene	0.667	0.290	J	mg/Kg		43	10 - 120
Hexachloroethane	0.667	0.451		mg/Kg		68	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.597		mg/Kg		89	65 - 122
Isophorone	0.667	0.529		mg/Kg		79	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.522		mg/Kg		78	48 - 120
N-Nitrosodiphenylamine	0.667	0.573		mg/Kg		86	64 - 120
Naphthalene	0.667	0.419		mg/Kg		63	34 - 120
Nitrobenzene	0.667	0.498		mg/Kg		75	48 - 120
Pentachlorophenol	1.33	0.482		mg/Kg		36	10 - 120
Phenanthrene	0.667	0.571		mg/Kg		86	60 - 120
Phenol	0.667	0.532		mg/Kg		80	48 - 120
Pyrene	0.667	0.695		mg/Kg		104	67 - 120
3 & 4 Methylphenol	0.667	0.520		mg/Kg		78	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	105		46 - 137
Phenol-d5 (Surr)	82		26 - 120
Nitrobenzene-d5 (Surr)	79		25 - 120
2-Fluorophenol (Surr)	80		20 - 120
2-Fluorobiphenyl (Surr)	83		34 - 120
2,4,6-Tribromophenol (Surr)	74		10 - 120

Lab Sample ID: LCS 240-563018/25-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563018

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	101		46 - 137
Phenol-d5 (Surr)	70		26 - 120
Nitrobenzene-d5 (Surr)	72		25 - 120
2-Fluorophenol (Surr)	68		20 - 120
2-Fluorobiphenyl (Surr)	68		34 - 120
2,4,6-Tribromophenol (Surr)	45		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563018/26-A
Matrix: Solid
Analysis Batch: 563266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563018

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	119		46 - 137
Phenol-d5 (Surr)	92		26 - 120
Nitrobenzene-d5 (Surr)	92		25 - 120
2-Fluorophenol (Surr)	73		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	34		10 - 120

Lab Sample ID: MB 240-563130/1-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563130

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Atrazine	ND		0.20	0.036	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/23/23 08:32	02/25/23 10:52	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563130/1-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563130

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Carbazole	ND		0.050	0.019	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Isophorone	ND		0.050	0.012	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Phenol	ND		0.050	0.0080	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/23/23 08:32	02/25/23 10:52	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/23/23 08:32	02/25/23 10:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	113		46 - 137	02/23/23 08:32	02/25/23 10:52	1
Phenol-d5 (Surr)	85		26 - 120	02/23/23 08:32	02/25/23 10:52	1
Nitrobenzene-d5 (Surr)	79		25 - 120	02/23/23 08:32	02/25/23 10:52	1
2-Fluorophenol (Surr)	67		20 - 120	02/23/23 08:32	02/25/23 10:52	1
2-Fluorobiphenyl (Surr)	84		34 - 120	02/23/23 08:32	02/25/23 10:52	1
2,4,6-Tribromophenol (Surr)	50		10 - 120	02/23/23 08:32	02/25/23 10:52	1

Lab Sample ID: LCS 240-563130/2-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.580		mg/Kg		87	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.562		mg/Kg		84	38 - 120
2,4,5-Trichlorophenol	0.667	0.596		mg/Kg		89	50 - 120
2,4,6-Trichlorophenol	0.667	0.601		mg/Kg		90	50 - 120
2,4-Dichlorophenol	0.667	0.556		mg/Kg		83	50 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563130/2-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dimethylphenol	0.667	0.466		mg/Kg		70	24 - 120
2,4-Dinitrophenol	1.33	1.27		mg/Kg		95	19 - 132
2,4-Dinitrotoluene	0.667	0.707		mg/Kg		106	64 - 120
2,6-Dinitrotoluene	0.667	0.663		mg/Kg		99	62 - 120
2-Chloronaphthalene	0.667	0.574		mg/Kg		86	51 - 120
2-Chlorophenol	0.667	0.496		mg/Kg		74	47 - 120
2-Methylnaphthalene	0.667	0.496		mg/Kg		74	38 - 120
2-Methylphenol	0.667	0.513		mg/Kg		77	45 - 120
2-Nitroaniline	0.667	0.692		mg/Kg		104	57 - 120
2-Nitrophenol	0.667	0.519		mg/Kg		78	51 - 120
3,3'-Dichlorobenzidine	1.33	1.22		mg/Kg		92	27 - 199
3-Nitroaniline	0.667	0.508		mg/Kg		76	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.30		mg/Kg		98	46 - 126
4-Bromophenyl phenyl ether	0.667	0.574		mg/Kg		86	65 - 120
4-Chloro-3-methylphenol	0.667	0.617		mg/Kg		92	51 - 120
4-Chloroaniline	0.667	0.337		mg/Kg		51	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.569		mg/Kg		85	59 - 120
4-Nitroaniline	0.667	0.600		mg/Kg		90	48 - 128
4-Nitrophenol	1.33	1.39		mg/Kg		104	43 - 120
Acenaphthene	0.667	0.565		mg/Kg		85	52 - 120
Acenaphthylene	0.667	0.571		mg/Kg		86	52 - 120
Acetophenone	0.667	0.536		mg/Kg		80	47 - 120
Anthracene	0.667	0.601		mg/Kg		90	64 - 120
Atrazine	1.33	1.28		mg/Kg		96	71 - 125
Benzaldehyde	1.33	1.07		mg/Kg		80	42 - 120
Benzo[a]anthracene	0.667	0.705		mg/Kg		106	70 - 120
Benzo[a]pyrene	0.667	0.630		mg/Kg		94	63 - 125
Benzo[b]fluoranthene	0.667	0.679		mg/Kg		102	64 - 121
Benzo[g,h,i]perylene	0.667	0.675		mg/Kg		101	62 - 120
Benzo[k]fluoranthene	0.667	0.638		mg/Kg		96	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.529		mg/Kg		79	50 - 120
Bis(2-chloroethyl)ether	0.667	0.489		mg/Kg		73	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.791		mg/Kg		119	63 - 133
Butyl benzyl phthalate	0.667	0.751		mg/Kg		113	66 - 127
Caprolactam	1.33	1.28		mg/Kg		96	67 - 120
Carbazole	0.667	0.595		mg/Kg		89	61 - 129
Chrysene	0.667	0.691		mg/Kg		104	67 - 120
Dibenz(a,h)anthracene	0.667	0.684		mg/Kg		103	62 - 120
Dibenzofuran	0.667	0.569		mg/Kg		85	55 - 120
Diethyl phthalate	0.667	0.655		mg/Kg		98	61 - 120
Dimethyl phthalate	0.667	0.636		mg/Kg		95	64 - 120
Di-n-butyl phthalate	0.667	0.654		mg/Kg		98	70 - 129
Di-n-octyl phthalate	0.667	0.744		mg/Kg		112	64 - 129
Fluoranthene	0.667	0.625		mg/Kg		94	71 - 124
Fluorene	0.667	0.568		mg/Kg		85	58 - 120
Hexachlorobenzene	0.667	0.544		mg/Kg		82	59 - 120
Hexachlorobutadiene	0.667	0.469		mg/Kg		70	45 - 120
Hexachlorocyclopentadiene	0.667	0.414		mg/Kg		62	10 - 120
Hexachloroethane	0.667	0.510		mg/Kg		77	39 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563130/2-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Indeno[1,2,3-cd]pyrene	0.667	0.696		mg/Kg		104	65 - 122
Isophorone	0.667	0.571		mg/Kg		86	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.564		mg/Kg		85	48 - 120
N-Nitrosodiphenylamine	0.667	0.585		mg/Kg		88	64 - 120
Naphthalene	0.667	0.489		mg/Kg		73	34 - 120
Nitrobenzene	0.667	0.538		mg/Kg		81	48 - 120
Pentachlorophenol	1.33	0.816		mg/Kg		61	10 - 120
Phenanthrene	0.667	0.596		mg/Kg		89	60 - 120
Phenol	0.667	0.524		mg/Kg		79	48 - 120
Pyrene	0.667	0.732		mg/Kg		110	67 - 120
3 & 4 Methylphenol	0.667	0.548		mg/Kg		82	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	115		46 - 137
Phenol-d5 (Surr)	89		26 - 120
Nitrobenzene-d5 (Surr)	86		25 - 120
2-Fluorophenol (Surr)	79		20 - 120
2-Fluorobiphenyl (Surr)	92		34 - 120
2,4,6-Tribromophenol (Surr)	89		10 - 120

Lab Sample ID: LCS 240-563130/3-A
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	106		46 - 137
Phenol-d5 (Surr)	73		26 - 120
Nitrobenzene-d5 (Surr)	73		25 - 120
2-Fluorophenol (Surr)	53		20 - 120
2-Fluorobiphenyl (Surr)	77		34 - 120
2,4,6-Tribromophenol (Surr)	31		10 - 120

Lab Sample ID: 240-180684-13 MS
Matrix: Solid
Analysis Batch: 563419

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: Total/NA
Prep Batch: 563130

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	ND		1.01	1.19	J	mg/Kg	☼	118	29 - 120
bis (2-chloroisopropyl) ether	ND	F1	1.01	1.78	J F1	mg/Kg	☼	176	10 - 120
2,4,5-Trichlorophenol	ND		1.01	ND		mg/Kg	☼	NC	35 - 120
2,4,6-Trichlorophenol	ND		1.01	ND		mg/Kg	☼	NC	18 - 120
2,4-Dichlorophenol	ND		1.01	ND		mg/Kg	☼	NC	21 - 120
2,4-Dimethylphenol	ND		1.01	ND		mg/Kg	☼	NC	10 - 120
2,4-Dinitrophenol	ND		2.02	ND		mg/Kg	☼	NC	10 - 126
2,4-Dinitrotoluene	ND		1.01	ND		mg/Kg	☼	NC	46 - 120
2,6-Dinitrotoluene	ND		1.01	ND		mg/Kg	☼	NC	44 - 120
2-Chloronaphthalene	ND		1.01	1.00	J	mg/Kg	☼	100	33 - 120
2-Chlorophenol	ND		1.01	0.920	J	mg/Kg	☼	91	19 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180684-13 MS

Matrix: Solid

Analysis Batch: 563419

Client Sample ID: WC-SB2650-N. DITCH

Prep Type: Total/NA

Prep Batch: 563130

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
2-Methylnaphthalene	1.2	F1 F2	1.01	3.74	F1	mg/Kg	✖	253	13 - 122
2-Methylphenol	ND		1.01	1.05	J	mg/Kg	✖	104	12 - 120
2-Nitroaniline	ND		1.01	ND		mg/Kg	✖	NC	36 - 122
2-Nitrophenol	ND		1.01	0.906	J	mg/Kg	✖	90	28 - 120
3,3'-Dichlorobenzidine	ND	F1	2.02	ND	F1	mg/Kg	✖	0	10 - 179
3-Nitroaniline	ND		1.01	ND		mg/Kg	✖	NC	10 - 123
4,6-Dinitro-2-methylphenol	ND		2.02	ND		mg/Kg	✖	NC	11 - 120
4-Bromophenyl phenyl ether	ND		1.01	0.965	J	mg/Kg	✖	96	49 - 120
4-Chloro-3-methylphenol	ND		1.01	ND		mg/Kg	✖	NC	35 - 120
4-Chloroaniline	ND	F1	1.01	ND	F1	mg/Kg	✖	0	10 - 120
4-Chlorophenyl phenyl ether	ND		1.01	1.02	J	mg/Kg	✖	101	45 - 120
4-Nitroaniline	ND		1.01	ND		mg/Kg	✖	NC	13 - 129
4-Nitrophenol	ND		2.02	2.80	J	mg/Kg	✖	NC	28 - 123
Acenaphthene	ND		1.01	1.16		mg/Kg	✖	115	33 - 120
Acenaphthylene	ND		1.01	1.10		mg/Kg	✖	109	39 - 120
Acetophenone	ND		1.01	1.06	J	mg/Kg	✖	105	11 - 120
Anthracene	0.44	J	1.01	1.24		mg/Kg	✖	79	30 - 127
Atrazine	ND		2.02	2.12	J	mg/Kg	✖	105	52 - 126
Benzaldehyde	ND		2.02	0.978	J	mg/Kg	✖	49	13 - 120
Benzo[a]anthracene	1.8		1.01	2.12		mg/Kg	✖	33	24 - 137
Benzo[a]pyrene	1.4		1.01	1.76		mg/Kg	✖	40	28 - 136
Benzo[b]fluoranthene	2.2	F1	1.01	2.21	F1	mg/Kg	✖	3	21 - 142
Benzo[g,h,i]perylene	0.61		1.01	0.848		mg/Kg	✖	24	10 - 144
Benzo[k]fluoranthene	0.83		1.01	1.52		mg/Kg	✖	69	36 - 135
Bis(2-chloroethoxy)methane	ND		1.01	0.928	J	mg/Kg	✖	92	25 - 120
Bis(2-chloroethyl)ether	ND		1.01	0.710	J	mg/Kg	✖	70	16 - 120
Bis(2-ethylhexyl) phthalate	ND		1.01	2.13		mg/Kg	✖	NC	37 - 143
Butyl benzyl phthalate	ND		1.01	1.12	J	mg/Kg	✖	111	49 - 130
Caprolactam	ND		2.02	ND		mg/Kg	✖	NC	37 - 127
Carbazole	ND		1.01	1.15	J	mg/Kg	✖	114	33 - 132
Chrysene	2.4	F1	1.01	2.43	F1	mg/Kg	✖	1	28 - 129
Dibenz(a,h)anthracene	ND		1.01	0.756		mg/Kg	✖	75	10 - 132
Dibenzofuran	0.53	J F1	1.01	1.90	F1	mg/Kg	✖	135	33 - 120
Diethyl phthalate	ND	F1	1.01	ND	F1	mg/Kg	✖	0	48 - 120
Dimethyl phthalate	ND		1.01	0.965	J	mg/Kg	✖	96	45 - 120
Di-n-butyl phthalate	ND		1.01	ND		mg/Kg	✖	NC	40 - 137
Di-n-octyl phthalate	ND		1.01	1.24	J	mg/Kg	✖	123	34 - 152
Fluoranthene	4.4		1.01	2.82	4	mg/Kg	✖	-159	31 - 140
Fluorene	0.12	J	1.01	1.13		mg/Kg	✖	99	43 - 120
Hexachlorobenzene	ND		1.01	0.854		mg/Kg	✖	85	44 - 120
Hexachlorobutadiene	ND		1.01	0.762	J	mg/Kg	✖	76	13 - 120
Hexachlorocyclopentadiene	ND		1.01	ND		mg/Kg	✖	NC	10 - 120
Hexachloroethane	ND		1.01	0.564	J	mg/Kg	✖	56	10 - 120
Indeno[1,2,3-cd]pyrene	0.55		1.01	0.947		mg/Kg	✖	40	10 - 139
Isophorone	ND		1.01	0.914	J	mg/Kg	✖	91	27 - 120
N-Nitrosodi-n-propylamine	ND		1.01	0.916	J	mg/Kg	✖	91	23 - 120
N-Nitrosodiphenylamine	ND		1.01	1.12	J	mg/Kg	✖	111	30 - 128
Naphthalene	0.75	F1 F2	1.01	2.72	F1	mg/Kg	✖	195	10 - 120
Nitrobenzene	ND		1.01	0.812	J	mg/Kg	✖	81	19 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180684-13 MS

Matrix: Solid

Analysis Batch: 563419

Client Sample ID: WC-SB2650-N. DITCH

Prep Type: Total/NA

Prep Batch: 563130

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Added	Result				
Pentachlorophenol	ND	F1	2.02	ND	F1	mg/Kg	⊛	0	10 - 120
Phenanthrene	3.4	F1	1.01	2.58	F1	mg/Kg	⊛	-79	36 - 120
Phenol	ND		1.01	0.967	J	mg/Kg	⊛	96	10 - 120
Pyrene	4.1		1.01	2.77	4	mg/Kg	⊛	-131	31 - 134
3 & 4 Methylphenol	ND		1.01	1.04	J	mg/Kg	⊛	103	10 - 122
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Terphenyl-d14 (Surr)	114		46 - 137						
Phenol-d5 (Surr)	111		26 - 120						
Nitrobenzene-d5 (Surr)	85		25 - 120						
2-Fluorophenol (Surr)	76		20 - 120						
2-Fluorobiphenyl (Surr)	109		34 - 120						
2,4,6-Tribromophenol (Surr)	134	S1+	10 - 120						

Lab Sample ID: 240-180684-13 MSD

Matrix: Solid

Analysis Batch: 563419

Client Sample ID: WC-SB2650-N. DITCH

Prep Type: Total/NA

Prep Batch: 563130

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Added	Result						
1,1'-Biphenyl	ND		0.999	1.05	J	mg/Kg	⊛	105	29 - 120	13	45
bis (2-chloroisopropyl) ether	ND	F1	0.999	1.94	J F1	mg/Kg	⊛	194	10 - 120	9	45
2,4,5-Trichlorophenol	ND		0.999	ND		mg/Kg	⊛	NC	35 - 120	NC	39
2,4,6-Trichlorophenol	ND		0.999	ND		mg/Kg	⊛	NC	18 - 120	NC	45
2,4-Dichlorophenol	ND		0.999	ND		mg/Kg	⊛	NC	21 - 120	NC	44
2,4-Dimethylphenol	ND		0.999	ND		mg/Kg	⊛	NC	10 - 120	NC	45
2,4-Dinitrophenol	ND		2.00	ND		mg/Kg	⊛	NC	10 - 126	NC	45
2,4-Dinitrotoluene	ND		0.999	ND		mg/Kg	⊛	NC	46 - 120	NC	45
2,6-Dinitrotoluene	ND		0.999	ND		mg/Kg	⊛	NC	44 - 120	NC	45
2-Chloronaphthalene	ND		0.999	0.895	J	mg/Kg	⊛	90	33 - 120	11	45
2-Chlorophenol	ND		0.999	0.879	J	mg/Kg	⊛	88	19 - 120	5	45
2-Methylnaphthalene	1.2	F1 F2	0.999	2.06	F2	mg/Kg	⊛	87	13 - 122	58	45
2-Methylphenol	ND		0.999	1.04	J	mg/Kg	⊛	104	12 - 120	1	45
2-Nitroaniline	ND		0.999	ND		mg/Kg	⊛	NC	36 - 122	NC	42
2-Nitrophenol	ND		0.999	0.906	J	mg/Kg	⊛	91	28 - 120	0	45
3,3'-Dichlorobenzidine	ND	F1	2.00	ND	F1	mg/Kg	⊛	0	10 - 179	NC	45
3-Nitroaniline	ND		0.999	ND		mg/Kg	⊛	NC	10 - 123	NC	45
4,6-Dinitro-2-methylphenol	ND		2.00	ND		mg/Kg	⊛	NC	11 - 120	NC	40
4-Bromophenyl phenyl ether	ND		0.999	0.902	J	mg/Kg	⊛	90	49 - 120	7	42
4-Chloro-3-methylphenol	ND		0.999	ND		mg/Kg	⊛	NC	35 - 120	NC	42
4-Chloroaniline	ND	F1	0.999	ND	F1	mg/Kg	⊛	0	10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND		0.999	0.944	J	mg/Kg	⊛	95	45 - 120	7	44
4-Nitroaniline	ND		0.999	ND		mg/Kg	⊛	NC	13 - 129	NC	38
4-Nitrophenol	ND		2.00	ND		mg/Kg	⊛	NC	28 - 123	NC	45
Acenaphthene	ND		0.999	1.05		mg/Kg	⊛	106	33 - 120	10	45
Acenaphthylene	ND		0.999	1.03		mg/Kg	⊛	103	39 - 120	7	45
Acetophenone	ND		0.999	0.962	J	mg/Kg	⊛	96	11 - 120	9	45
Anthracene	0.44	J	0.999	1.13		mg/Kg	⊛	69	30 - 127	10	45
Atrazine	ND		2.00	1.88	J	mg/Kg	⊛	94	52 - 126	12	34

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180684-13 MSD

Matrix: Solid

Analysis Batch: 563419

Client Sample ID: WC-SB2650-N. DITCH

Prep Type: Total/NA

Prep Batch: 563130

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzaldehyde	ND		2.00	1.04	J	mg/Kg	⊛	52	13 - 120	6	45
Benzo[a]anthracene	1.8		0.999	2.46		mg/Kg	⊛	67	24 - 137	15	42
Benzo[a]pyrene	1.4		0.999	1.80		mg/Kg	⊛	45	28 - 136	2	41
Benzo[b]fluoranthene	2.2	F1	0.999	2.46		mg/Kg	⊛	29	21 - 142	11	42
Benzo[g,h,i]perylene	0.61		0.999	0.796		mg/Kg	⊛	19	10 - 144	6	40
Benzo[k]fluoranthene	0.83		0.999	1.75		mg/Kg	⊛	92	36 - 135	14	44
Bis(2-chloroethoxy)methane	ND		0.999	0.911	J	mg/Kg	⊛	91	25 - 120	2	45
Bis(2-chloroethyl)ether	ND		0.999	0.675	J	mg/Kg	⊛	68	16 - 120	5	45
Bis(2-ethylhexyl) phthalate	ND		0.999	2.14		mg/Kg	⊛	NC	37 - 143	1	38
Butyl benzyl phthalate	ND		0.999	1.04	J	mg/Kg	⊛	104	49 - 130	7	41
Caprolactam	ND		2.00	ND		mg/Kg	⊛	NC	37 - 127	NC	45
Carbazole	ND		0.999	1.09	J	mg/Kg	⊛	109	33 - 132	6	45
Chrysene	2.4	F1	0.999	2.93		mg/Kg	⊛	51	28 - 129	19	42
Dibenz(a,h)anthracene	ND		0.999	0.643		mg/Kg	⊛	64	10 - 132	16	37
Dibenzofuran	0.53	J F1	0.999	1.46	J	mg/Kg	⊛	93	33 - 120	26	43
Diethyl phthalate	ND	F1	0.999	ND	F1	mg/Kg	⊛	0	48 - 120	NC	38
Dimethyl phthalate	ND		0.999	0.811	J	mg/Kg	⊛	81	45 - 120	17	43
Di-n-butyl phthalate	ND		0.999	ND		mg/Kg	⊛	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND		0.999	1.17	J	mg/Kg	⊛	117	34 - 152	6	39
Fluoranthene	4.4		0.999	4.39	4	mg/Kg	⊛	-4	31 - 140	44	45
Fluorene	0.12	J	0.999	1.05		mg/Kg	⊛	93	43 - 120	7	39
Hexachlorobenzene	ND		0.999	0.776		mg/Kg	⊛	78	44 - 120	10	39
Hexachlorobutadiene	ND		0.999	0.760	J	mg/Kg	⊛	76	13 - 120	0	45
Hexachlorocyclopentadiene	ND		0.999	ND		mg/Kg	⊛	NC	10 - 120	NC	45
Hexachloroethane	ND		0.999	0.564	J	mg/Kg	⊛	56	10 - 120	0	45
Indeno[1,2,3-cd]pyrene	0.55		0.999	0.917		mg/Kg	⊛	37	10 - 139	3	41
Isophorone	ND		0.999	0.881	J	mg/Kg	⊛	88	27 - 120	4	45
N-Nitrosodi-n-propylamine	ND		0.999	0.929	J	mg/Kg	⊛	93	23 - 120	1	45
N-Nitrosodiphenylamine	ND		0.999	0.908	J	mg/Kg	⊛	91	30 - 128	21	44
Naphthalene	0.75	F1 F2	0.999	1.66	F2	mg/Kg	⊛	91	10 - 120	49	45
Nitrobenzene	ND		0.999	0.885	J	mg/Kg	⊛	89	19 - 120	9	45
Pentachlorophenol	ND	F1	2.00	ND	F1	mg/Kg	⊛	0	10 - 120	NC	45
Phenanthrene	3.4	F1	0.999	2.22	F1	mg/Kg	⊛	-116	36 - 120	15	41
Phenol	ND		0.999	0.949	J	mg/Kg	⊛	95	10 - 120	2	45
Pyrene	4.1		0.999	3.78	4	mg/Kg	⊛	-31	31 - 134	31	43
3 & 4 Methylphenol	ND		0.999	0.978	J	mg/Kg	⊛	98	10 - 122	6	45

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	103		46 - 137
Phenol-d5 (Surr)	101		26 - 120
Nitrobenzene-d5 (Surr)	85		25 - 120
2-Fluorophenol (Surr)	88		20 - 120
2-Fluorobiphenyl (Surr)	96		34 - 120
2,4,6-Tribromophenol (Surr)	127	S1+	10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563202/13-A

Matrix: Solid

Analysis Batch: 563273

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 563202

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/23/23 12:44	02/24/23 12:04	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/23/23 12:44	02/24/23 12:04	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/23/23 12:44	02/24/23 12:04	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/23/23 12:44	02/24/23 12:04	1
Pyridine	ND		0.0040	0.00036	mg/L		02/23/23 12:44	02/24/23 12:04	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/23/23 12:44	02/24/23 12:04	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/23/23 12:44	02/24/23 12:04	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/23/23 12:44	02/24/23 12:04	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/23/23 12:44	02/24/23 12:04	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/23/23 12:44	02/24/23 12:04	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/23/23 12:44	02/24/23 12:04	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/23/23 12:44	02/24/23 12:04	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	111		46 - 137	02/23/23 12:44	02/24/23 12:04	1
Phenol-d5 (Surr)	59		26 - 120	02/23/23 12:44	02/24/23 12:04	1
Nitrobenzene-d5 (Surr)	73		24 - 120	02/23/23 12:44	02/24/23 12:04	1
2-Fluorophenol (Surr)	69		19 - 120	02/23/23 12:44	02/24/23 12:04	1
2-Fluorobiphenyl (Surr)	94		33 - 120	02/23/23 12:44	02/24/23 12:04	1
2,4,6-Tribromophenol (Surr)	99		10 - 120	02/23/23 12:44	02/24/23 12:04	1

Lab Sample ID: LCS 240-563202/14-A

Matrix: Solid

Analysis Batch: 563273

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 563202

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0607		mg/L		76	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0837		mg/L		105	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0829		mg/L		104	51 - 120
2,4-Dinitrotoluene	0.0800	0.0740		mg/L		92	58 - 125
Pyridine	0.160	0.0536		mg/L		33	10 - 120
2-Methylphenol	0.0800	0.0681		mg/L		85	45 - 120
Hexachlorobenzene	0.0800	0.0764		mg/L		96	55 - 120
Hexachlorobutadiene	0.0800	0.0652		mg/L		81	41 - 120
Hexachloroethane	0.0800	0.0577		mg/L		72	39 - 120
Nitrobenzene	0.0800	0.0561		mg/L		70	47 - 120
Pentachlorophenol	0.160	0.124		mg/L		78	19 - 132
3 & 4 Methylphenol	0.0800	0.0612		mg/L		76	40 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	119		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	74		24 - 120
2-Fluorophenol (Surr)	73		19 - 120
2-Fluorobiphenyl (Surr)	98		33 - 120
2,4,6-Tribromophenol (Surr)	108		10 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563436/22-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563436

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Atrazine	ND		0.20	0.036	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Carbazole	ND		0.050	0.019	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/25/23 15:12	02/28/23 10:22	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563436/22-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563436

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Isophorone	ND		0.050	0.012	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Phenol	ND		0.050	0.0080	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
Pyrene	ND		0.015	0.0021	mg/Kg		02/25/23 15:12	02/28/23 10:22	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/25/23 15:12	02/28/23 10:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	100		46 - 137	02/25/23 15:12	02/28/23 10:22	1
Phenol-d5 (Surr)	58		26 - 120	02/25/23 15:12	02/28/23 10:22	1
Nitrobenzene-d5 (Surr)	52		25 - 120	02/25/23 15:12	02/28/23 10:22	1
2-Fluorophenol (Surr)	52		20 - 120	02/25/23 15:12	02/28/23 10:22	1
2-Fluorobiphenyl (Surr)	71		34 - 120	02/25/23 15:12	02/28/23 10:22	1
2,4,6-Tribromophenol (Surr)	48		10 - 120	02/25/23 15:12	02/28/23 10:22	1

Lab Sample ID: LCS 240-563436/23-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
bis (2-chloroisopropyl) ether	0.667	0.336		mg/Kg		50	38 - 120
2,4,5-Trichlorophenol	0.667	0.600		mg/Kg		90	50 - 120
2,4,6-Trichlorophenol	0.667	0.607		mg/Kg		91	50 - 120
2,4-Dichlorophenol	0.667	0.550		mg/Kg		83	50 - 120
2,4-Dimethylphenol	0.667	0.417		mg/Kg		63	24 - 120
2,4-Dinitrophenol	1.33	0.952		mg/Kg		71	19 - 132
2,4-Dinitrotoluene	0.667	0.593		mg/Kg		89	64 - 120
2,6-Dinitrotoluene	0.667	0.641		mg/Kg		96	62 - 120
2-Chloronaphthalene	0.667	0.484		mg/Kg		73	51 - 120
2-Chlorophenol	0.667	0.453		mg/Kg		68	47 - 120
2-Methylnaphthalene	0.667	0.462		mg/Kg		69	38 - 120
2-Methylphenol	0.667	0.479		mg/Kg		72	45 - 120
2-Nitroaniline	0.667	0.496		mg/Kg		74	57 - 120
2-Nitrophenol	0.667	0.566		mg/Kg		85	51 - 120
3,3'-Dichlorobenzidine	1.33	1.15		mg/Kg		86	27 - 199
3-Nitroaniline	0.667	0.495		mg/Kg		74	41 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563436/23-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,6-Dinitro-2-methylphenol	1.33	1.02		mg/Kg		77	46 - 126
4-Bromophenyl phenyl ether	0.667	0.637		mg/Kg		96	65 - 120
4-Chloro-3-methylphenol	0.667	0.548		mg/Kg		82	51 - 120
4-Chloroaniline	0.667	0.404		mg/Kg		61	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.562		mg/Kg		84	59 - 120
4-Nitroaniline	0.667	0.579		mg/Kg		87	48 - 128
4-Nitrophenol	1.33	1.02		mg/Kg		76	43 - 120
Acenaphthene	0.667	0.529		mg/Kg		79	52 - 120
Acenaphthylene	0.667	0.569		mg/Kg		85	52 - 120
Acetophenone	0.667	0.403		mg/Kg		61	47 - 120
Anthracene	0.667	0.611		mg/Kg		92	64 - 120
Atrazine	1.33	1.51		mg/Kg		114	71 - 125
Benzaldehyde	1.33	0.762		mg/Kg		57	42 - 120
Benzo[a]anthracene	0.667	0.680		mg/Kg		102	70 - 120
Benzo[a]pyrene	0.667	0.605		mg/Kg		91	63 - 125
Benzo[b]fluoranthene	0.667	0.600		mg/Kg		90	64 - 121
Benzo[g,h,i]perylene	0.667	0.607		mg/Kg		91	62 - 120
Benzo[k]fluoranthene	0.667	0.591		mg/Kg		89	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.412		mg/Kg		62	50 - 120
Bis(2-chloroethyl)ether	0.667	0.348		mg/Kg		52	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.630		mg/Kg		94	63 - 133
Butyl benzyl phthalate	0.667	0.617		mg/Kg		93	66 - 127
Caprolactam	1.33	1.22		mg/Kg		92	67 - 120
Carbazole	0.667	0.589		mg/Kg		88	61 - 129
Chrysene	0.667	0.644		mg/Kg		97	67 - 120
Dibenz(a,h)anthracene	0.667	0.617		mg/Kg		93	62 - 120
Dibenzofuran	0.667	0.523		mg/Kg		78	55 - 120
Diethyl phthalate	0.667	0.564		mg/Kg		85	61 - 120
Dimethyl phthalate	0.667	0.567		mg/Kg		85	64 - 120
Di-n-butyl phthalate	0.667	0.637		mg/Kg		96	70 - 129
Di-n-octyl phthalate	0.667	0.516		mg/Kg		77	64 - 129
Fluoranthene	0.667	0.632		mg/Kg		95	71 - 124
Fluorene	0.667	0.561		mg/Kg		84	58 - 120
Hexachlorobenzene	0.667	0.604		mg/Kg		91	59 - 120
Hexachlorobutadiene	0.667	0.475		mg/Kg		71	45 - 120
Hexachlorocyclopentadiene	0.667	0.402		mg/Kg		60	10 - 120
Hexachloroethane	0.667	0.393		mg/Kg		59	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.638		mg/Kg		96	65 - 122
Isophorone	0.667	0.420		mg/Kg		63	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.377		mg/Kg		57	48 - 120
N-Nitrosodiphenylamine	0.667	0.578		mg/Kg		87	64 - 120
Naphthalene	0.667	0.439		mg/Kg		66	34 - 120
Nitrobenzene	0.667	0.398		mg/Kg		60	48 - 120
Pentachlorophenol	1.33	0.620		mg/Kg		46	10 - 120
Phenanthrene	0.667	0.572		mg/Kg		86	60 - 120
Phenol	0.667	0.392		mg/Kg		59	48 - 120
Pyrene	0.667	0.685		mg/Kg		103	67 - 120
3 & 4 Methylphenol	0.667	0.448		mg/Kg		67	49 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563436/23-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563436

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	115		46 - 137
Phenol-d5 (Surr)	67		26 - 120
Nitrobenzene-d5 (Surr)	60		25 - 120
2-Fluorophenol (Surr)	68		20 - 120
2-Fluorobiphenyl (Surr)	83		34 - 120
2,4,6-Tribromophenol (Surr)	103		10 - 120

Lab Sample ID: LCS 240-563436/24-A
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563436

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	104		46 - 137
Phenol-d5 (Surr)	38		26 - 120
Nitrobenzene-d5 (Surr)	33		25 - 120
2-Fluorophenol (Surr)	36		20 - 120
2-Fluorobiphenyl (Surr)	46		34 - 120
2,4,6-Tribromophenol (Surr)	31		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-563205/10-A
Matrix: Solid
Analysis Batch: 563280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563205

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/23/23 12:51	02/24/23 10:39	1
Endrin	ND		0.00050	0.0000065	mg/L		02/23/23 12:51	02/24/23 10:39	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/23/23 12:51	02/24/23 10:39	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/23/23 12:51	02/24/23 10:39	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/23/23 12:51	02/24/23 10:39	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/23/23 12:51	02/24/23 10:39	1
Toxaphene	ND		0.020	0.000058	mg/L		02/23/23 12:51	02/24/23 10:39	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	86		10 - 145	02/23/23 12:51	02/24/23 10:39	1
DCB Decachlorobiphenyl	88		10 - 145	02/23/23 12:51	02/24/23 10:39	1
Tetrachloro-m-xylene	76		10 - 123	02/23/23 12:51	02/24/23 10:39	1
Tetrachloro-m-xylene	94		10 - 123	02/23/23 12:51	02/24/23 10:39	1

Lab Sample ID: LCS 240-563205/11-A
Matrix: Solid
Analysis Batch: 563280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563205

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Endrin	0.00100	0.000943		mg/L		94	36 - 120
Heptachlor	0.00100	0.000860		mg/L		86	29 - 120
Heptachlor epoxide	0.00100	0.000891		mg/L		89	36 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-563205/11-A
Matrix: Solid
Analysis Batch: 563280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563205

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-BHC (Lindane)	0.00100	0.000881		mg/L		88	23 - 120
Methoxychlor	0.00100	0.00111		mg/L		111	23 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	84		10 - 145
DCB Decachlorobiphenyl	82		10 - 145
Tetrachloro-m-xylene	69		10 - 123
Tetrachloro-m-xylene	84		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-562981/1-A
Matrix: Solid
Analysis Batch: 563104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 562981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		50	25	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1221	ND		50	30	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1232	ND		50	21	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1242	ND		50	19	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1248	ND		50	17	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1254	ND		50	21	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1260	ND		50	21	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1262	ND		50	22	ug/Kg		02/22/23 08:41	02/23/23 13:36	1
Aroclor-1268	ND		50	16	ug/Kg		02/22/23 08:41	02/23/23 13:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	79		10 - 149	02/22/23 08:41	02/23/23 13:36	1
DCB Decachlorobiphenyl	70		10 - 174	02/22/23 08:41	02/23/23 13:36	1

Lab Sample ID: LCS 240-562981/2-A
Matrix: Solid
Analysis Batch: 563104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 562981

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	919		ug/Kg		92	28 - 140
Aroclor-1260	1000	968		ug/Kg		97	39 - 153

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	109		10 - 149
DCB Decachlorobiphenyl	102		10 - 174

Lab Sample ID: 240-180684-6 MS
Matrix: Solid
Analysis Batch: 563104

Client Sample ID: WC-WS-NORTH-COMP (1-5)
Prep Type: Total/NA
Prep Batch: 562981

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	ND		1250	914		ug/Kg	☼	73	10 - 146

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 240-180684-6 MS

Matrix: Solid

Analysis Batch: 563104

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Prep Type: Total/NA

Prep Batch: 562981

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1260	ND		1250	962		ug/Kg	☼	77	10 - 158
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Tetrachloro-m-xylene	88		10 - 149						
DCB Decachlorobiphenyl	96	p	10 - 174						

Lab Sample ID: 240-180684-6 MSD

Matrix: Solid

Analysis Batch: 563104

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Prep Type: Total/NA

Prep Batch: 562981

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Aroclor-1016	ND		1300	970		ug/Kg	☼	75	10 - 146	6	40
Aroclor-1260	ND		1300	1030		ug/Kg	☼	79	10 - 158	7	40
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Tetrachloro-m-xylene	88		10 - 149								
DCB Decachlorobiphenyl	103	p	10 - 174								

Lab Sample ID: MB 240-563290/1-A

Matrix: Solid

Analysis Batch: 563246

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 563290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		50	25	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1221	ND		50	30	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1232	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1242	ND		50	19	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1248	ND		50	17	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1254	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1260	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1262	ND		50	22	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1268	ND		50	16	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Tetrachloro-m-xylene	113		10 - 149	02/24/23 09:04	02/24/23 17:11	1			
DCB Decachlorobiphenyl	146		10 - 174	02/24/23 09:04	02/24/23 17:11	1			

Lab Sample ID: LCS 240-563290/2-A

Matrix: Solid

Analysis Batch: 563246

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 563290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	928		ug/Kg		93	28 - 140
Aroclor-1260	1000	1010		ug/Kg		101	39 - 153
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene	111		10 - 149				

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-563290/2-A
Matrix: Solid
Analysis Batch: 563246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563290

Surrogate	LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	121		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-347942/1-A
Matrix: Solid
Analysis Batch: 348043

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347942

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/24/23 19:47	02/27/23 04:51	1
2,4-D	ND		0.050	0.016	mg/L		02/24/23 19:47	02/27/23 04:51	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	02/24/23 19:47	02/27/23 04:51	1

Lab Sample ID: LCS 410-347942/2-A
Matrix: Solid
Analysis Batch: 348043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347942

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Silvex (2,4,5-TP)	0.00500	0.00412	J	mg/L		82	58 - 148
2,4-D	0.0502	0.0394	J	mg/L		78	42 - 147

Surrogate	LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid (Surr)	73		26 - 136

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-347896/1-B
Matrix: Solid
Analysis Batch: 348165

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347896

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/24/23 17:55	02/27/23 11:39	1
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/24/23 17:55	02/27/23 11:39	1

Isotope Dilution	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOA	85		26 - 159	02/24/23 17:55	02/27/23 11:39	1
13C8 PFOS	91		41 - 154	02/24/23 17:55	02/27/23 11:39	1

Lab Sample ID: LCS 410-347896/2-B
Matrix: Solid
Analysis Batch: 348165

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347896

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Perfluorooctanoic acid	25.0	24.8		ng/g		99	59 - 131
Perfluorooctanesulfonic acid	23.1	21.7		ng/g		94	61 - 126

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C8 PFOA	78		26 - 159
13C8 PFOS	87		41 - 154

Lab Sample ID: 240-180684-B-12-E MS
Matrix: Solid
Analysis Batch: 348165

Client Sample ID: 240-180684-B-12-E MS
Prep Type: Total/NA
Prep Batch: 347896

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Perfluorooctanoic acid	ND		29.7	29.5		ng/g	☼	99	59 - 131
Perfluorooctanesulfonic acid	0.25	J	27.5	27.3		ng/g	☼	98	61 - 126

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C8 PFOA	74		26 - 159
13C8 PFOS	84		41 - 154

Lab Sample ID: 240-180684-B-12-F MSD
Matrix: Solid
Analysis Batch: 348165

Client Sample ID: 240-180684-B-12-F MSD
Prep Type: Total/NA
Prep Batch: 347896

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Perfluorooctanoic acid	ND		32.1	34.0		ng/g	☼	106	59 - 131	14	30
Perfluorooctanesulfonic acid	0.25	J	29.7	29.2		ng/g	☼	98	61 - 126	7	30

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C8 PFOA	69		26 - 159
13C8 PFOS	76		41 - 154

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-563029/2-A
Matrix: Solid
Analysis Batch: 563244

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563029

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 11:11	1
Barium	ND		0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 11:11	1
Cadmium	ND		0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 11:11	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 11:11	1
Lead	ND		0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 11:11	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 11:11	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 11:11	1

Lab Sample ID: LCS 240-563029/3-A
Matrix: Solid
Analysis Batch: 563244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563029

Analyte	Spike	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Arsenic	2.00	2.06		mg/L		103	50 - 150
Barium	2.00	1.90		mg/L		95	50 - 150
Cadmium	1.00	0.986		mg/L		99	50 - 150
Chromium	1.00	0.954		mg/L		95	50 - 150
Lead	1.00	0.930		mg/L		93	50 - 150
Selenium	2.00	2.09		mg/L		105	50 - 150

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-563029/3-A
Matrix: Solid
Analysis Batch: 563244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.100	0.102		mg/L		102	50 - 150

Lab Sample ID: MB 240-563166/2-A
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563166

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 14:40	1
Barium	ND		0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 14:40	1
Cadmium	0.000473	J	0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 14:40	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 14:40	1
Lead	ND		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 14:40	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 14:40	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 14:40	1

Lab Sample ID: LCS 240-563166/3-A
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563166

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.10		mg/L		105	50 - 150
Barium	2.00	1.94		mg/L		97	50 - 150
Cadmium	1.00	1.01		mg/L		101	50 - 150
Chromium	1.00	0.980		mg/L		98	50 - 150
Lead	1.00	0.928		mg/L		93	50 - 150
Selenium	2.00	2.10		mg/L		105	50 - 150
Silver	0.100	0.106		mg/L		106	50 - 150

Lab Sample ID: MB 240-563181/2-A
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563181

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 10:29	1
Barium	ND		0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 10:29	1
Cadmium	ND		0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 10:29	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 10:29	1
Lead	ND		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 10:29	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 10:29	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 10:29	1

Lab Sample ID: LCS 240-563181/3-A
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.10		mg/L		105	50 - 150
Barium	2.00	1.95		mg/L		98	50 - 150
Cadmium	1.00	1.01		mg/L		101	50 - 150
Chromium	1.00	0.990		mg/L		99	50 - 150

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-563181/3-A
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	1.00	0.927		mg/L		93	50 - 150
Selenium	2.00	2.10		mg/L		105	50 - 150
Silver	0.100	0.107		mg/L		107	50 - 150

Lab Sample ID: LB 240-562925/1-B
Matrix: Solid
Analysis Batch: 563244

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563029

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00492	J	0.050	0.0041	mg/L		02/22/23 12:00	02/23/23 11:06	1
Barium	0.00213	J	0.50	0.0013	mg/L		02/22/23 12:00	02/23/23 11:06	1
Cadmium	ND		0.050	0.00020	mg/L		02/22/23 12:00	02/23/23 11:06	1
Chromium	ND		0.050	0.0040	mg/L		02/22/23 12:00	02/23/23 11:06	1
Lead	ND		0.050	0.0028	mg/L		02/22/23 12:00	02/23/23 11:06	1
Selenium	ND		0.050	0.0060	mg/L		02/22/23 12:00	02/23/23 11:06	1
Silver	ND		0.050	0.00062	mg/L		02/22/23 12:00	02/23/23 11:06	1

Lab Sample ID: LB 240-563077/1-B
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563166

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 14:35	1
Barium	ND		0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 14:35	1
Cadmium	ND		0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 14:35	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 14:35	1
Lead	ND		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 14:35	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 14:35	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 14:35	1

Lab Sample ID: LB 240-563080/1-B
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563181

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/23/23 14:00	02/24/23 10:25	1
Barium	0.00303	J	0.50	0.0013	mg/L		02/23/23 14:00	02/24/23 10:25	1
Cadmium	ND		0.050	0.00020	mg/L		02/23/23 14:00	02/24/23 10:25	1
Chromium	ND		0.050	0.0040	mg/L		02/23/23 14:00	02/24/23 10:25	1
Lead	ND		0.050	0.0028	mg/L		02/23/23 14:00	02/24/23 10:25	1
Selenium	ND		0.050	0.0060	mg/L		02/23/23 14:00	02/24/23 10:25	1
Silver	ND		0.050	0.00062	mg/L		02/23/23 14:00	02/24/23 10:25	1

Lab Sample ID: 240-180684-13 MS
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: TCLP
Prep Batch: 563181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		5.00	5.09		mg/L		102	75 - 125
Barium	0.62	J B	50.0	49.7		mg/L		98	75 - 125

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-180684-13 MS
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: TCLP
Prep Batch: 563181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.0047	J	1.00	1.02		mg/L		102	75 - 125
Chromium	ND		5.00	4.96		mg/L		99	75 - 125
Lead	ND		5.00	4.78		mg/L		96	75 - 125
Selenium	ND		1.00	1.04		mg/L		104	75 - 125
Silver	ND		1.00	1.03		mg/L		103	75 - 125

Lab Sample ID: 240-180684-13 MSD
Matrix: Solid
Analysis Batch: 563358

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: TCLP
Prep Batch: 563181

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		5.00	5.12		mg/L		102	75 - 125	1	20
Barium	0.62	J B	50.0	49.4		mg/L		98	75 - 125	1	20
Cadmium	0.0047	J	1.00	1.02		mg/L		102	75 - 125	0	20
Chromium	ND		5.00	4.93		mg/L		99	75 - 125	1	20
Lead	ND		5.00	4.79		mg/L		96	75 - 125	0	20
Selenium	ND		1.00	0.998		mg/L		100	75 - 125	4	20
Silver	ND		1.00	1.02		mg/L		102	75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-563030/2-A
Matrix: Solid
Analysis Batch: 563217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563030

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 15:07	1

Lab Sample ID: LCS 240-563030/3-A
Matrix: Solid
Analysis Batch: 563217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563030

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00503		mg/L		101	80 - 120

Lab Sample ID: MB 240-563167/2-A
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:30	1

Lab Sample ID: LCS 240-563167/3-A
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00518		mg/L		104	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 240-563182/2-A
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 09:37	1

Lab Sample ID: LCS 240-563182/3-A
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00524		mg/L		105	80 - 120

Lab Sample ID: LB 240-562925/1-C
Matrix: Solid
Analysis Batch: 563217

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563030

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/22/23 12:00	02/23/23 14:17	1

Lab Sample ID: LB 240-563077/1-C
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563167

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 10:28	1

Lab Sample ID: LB 240-563080/1-C
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563182

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/23/23 12:00	02/24/23 09:35	1

Lab Sample ID: 240-180684-13 MS
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: TCLP
Prep Batch: 563182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.00541		mg/L		108	80 - 120

Lab Sample ID: 240-180684-13 MSD
Matrix: Solid
Analysis Batch: 563338

Client Sample ID: WC-SB2650-N. DITCH
Prep Type: TCLP
Prep Batch: 563182

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00530		mg/L		106	80 - 120	2	20

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180684-D-14 DU
Matrix: Solid
Analysis Batch: 562900

Client Sample ID: 240-180684-D-14 DU
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids			63.3		%			
Percent Moisture			36.7		%			

Lab Sample ID: 240-180684-19 DU
Matrix: Solid
Analysis Batch: 563043

Client Sample ID: WC-SB2621-N. DITCH
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	47.4		44.5		%			20
Percent Moisture	52.6		55.5		%			20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS VOA

Composite Batch: 562901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	Composite	
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	Composite	

Prep Batch: 562918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	5035	
MB 240-562918/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	5035	

Prep Batch: 562940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-2	WC-WS-NORTH-02 (6-7)	Total/NA	Solid	5035	
240-180684-3	WC-WS-NORTH-03 (7-8)	Total/NA	Solid	5035	
240-180684-4	WC-WS-NORTH-04 (4-5)	Total/NA	Solid	5035	
240-180684-5	WC-WS-NORTH-05 (5-6)	Total/NA	Solid	5035	
240-180684-7	WC-WS-NORTH-06 (5-6)	Total/NA	Solid	5035	
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	5035	
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	5035	
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	5035	
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	5035	
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	5035	
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	5035	
240-180684-15	WC-SB2598-N. DITCH	Total/NA	Solid	5035	
240-180684-16	WC-SB1852-N. DITCH	Total/NA	Solid	5035	
MB 240-562940/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-562940/2-A	Lab Control Sample	Total/NA	Solid	5035	

Composite Batch: 563056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	Composite	
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	Composite	

Analysis Batch: 563073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563078/1-A	Method Blank	Total/NA	Solid	8260D	563078
LCS 240-563078/2-A	Lab Control Sample	Total/NA	Solid	8260D	563078

Prep Batch: 563078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	5035	
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	5035	
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	5035	
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	5035	
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	5035	
240-180684-23	WC-SB2405-N. DITCH	Total/NA	Solid	5035	
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	5035	
MB 240-563078/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-563078/2-A	Lab Control Sample	Total/NA	Solid	5035	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS VOA

Leach Batch: 563082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	1311	562901
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	1311	562901
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	1311	563056
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	1311	563056
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	1311	
LB 240-563082/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 563142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	8260D	563082
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	8260D	563082
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	8260D	563082
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	8260D	563082
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	8260D	563082
LB 240-563082/1-A MB	Method Blank	TCLP	Solid	8260D	563082
LCS 240-563142/10	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 563220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	8260D	562918
240-180684-2	WC-WS-NORTH-02 (6-7)	Total/NA	Solid	8260D	562940
240-180684-3	WC-WS-NORTH-03 (7-8)	Total/NA	Solid	8260D	562940
240-180684-4	WC-WS-NORTH-04 (4-5)	Total/NA	Solid	8260D	562940
240-180684-7	WC-WS-NORTH-06 (5-6)	Total/NA	Solid	8260D	562940
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	8260D	562940
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	8260D	562940
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	8260D	562940
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	8260D	562940
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-15	WC-SB2598-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-16	WC-SB1852-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-23	WC-SB2405-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	8260D	563078
MB 240-562918/1-A	Method Blank	Total/NA	Solid	8260D	562918
MB 240-562940/1-A	Method Blank	Total/NA	Solid	8260D	562940
LCS 240-562918/2-A	Lab Control Sample	Total/NA	Solid	8260D	562918
LCS 240-562940/2-A	Lab Control Sample	Total/NA	Solid	8260D	562940

Analysis Batch: 563308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	8260D	562918
240-180684-5	WC-WS-NORTH-05 (5-6)	Total/NA	Solid	8260D	562940
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	8260D	562940
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	8260D	562940
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	8260D	562940

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS VOA (Continued)

Analysis Batch: 563308 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	8260D	562940
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	8260D	562940
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	8260D	563078
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	8260D	563078

Analysis Batch: 563382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	8260D	563391
MB 240-563391/1-A	Method Blank	Total/NA	Solid	8260D	563391
LCS 240-563382/4	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 563391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	5035	
MB 240-563391/1-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 563434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	5035	
MB 240-563434/1-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 563457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563457/1-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 563458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	8260D	563434
MB 240-563434/1-A	Method Blank	Total/NA	Solid	8260D	563434
MB 240-563457/1-A	Method Blank	Total/NA	Solid	8260D	563457
LCS 240-563458/4	Lab Control Sample	Total/NA	Solid	8260D	

GC/MS Semi VOA

Composite Batch: 562901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	Composite	
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	Composite	

Prep Batch: 563018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	3540C	
240-180684-2	WC-WS-NORTH-02 (6-7)	Total/NA	Solid	3540C	
240-180684-3	WC-WS-NORTH-03 (7-8)	Total/NA	Solid	3540C	
240-180684-4	WC-WS-NORTH-04 (4-5)	Total/NA	Solid	3540C	
240-180684-5	WC-WS-NORTH-05 (5-6)	Total/NA	Solid	3540C	
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	3540C	
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	3540C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS Semi VOA (Continued)

Prep Batch: 563018 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563018/23-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-563018/24-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-563018/25-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-563018/26-A	Lab Control Sample	Total/NA	Solid	3540C	

Composite Batch: 563056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	Composite	
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	Composite	

Leach Batch: 563077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	1311	562901
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	1311	562901
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	1311	563056
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	1311	563056
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	1311	

Prep Batch: 563130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	3540C	
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	3540C	
240-180684-15	WC-SB2598-N. DITCH	Total/NA	Solid	3540C	
240-180684-16	WC-SB1852-N. DITCH	Total/NA	Solid	3540C	
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	3540C	
240-180684-19 - RA	WC-SB2621-N. DITCH	Total/NA	Solid	3540C	
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	3540C	
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	3540C	
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	3540C	
240-180684-21 - RA	WC-SB2624-N. DITCH	Total/NA	Solid	3540C	
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	3540C	
240-180684-23	WC-SB2405-N. DITCH	Total/NA	Solid	3540C	
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	3540C	
MB 240-563130/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-563130/2-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-563130/3-A	Lab Control Sample	Total/NA	Solid	3540C	
240-180684-13 MS	WC-SB2650-N. DITCH	Total/NA	Solid	3540C	
240-180684-13 MSD	WC-SB2650-N. DITCH	Total/NA	Solid	3540C	

Prep Batch: 563202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	3510C	563077
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	3510C	563077
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	3510C	563077
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	3510C	563077
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	3510C	563077
MB 240-563202/13-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563202/14-A	Lab Control Sample	Total/NA	Solid	3510C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS Semi VOA

Analysis Batch: 563266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	8270E	563018
240-180684-3	WC-WS-NORTH-03 (7-8)	Total/NA	Solid	8270E	563018
240-180684-4	WC-WS-NORTH-04 (4-5)	Total/NA	Solid	8270E	563018
240-180684-5	WC-WS-NORTH-05 (5-6)	Total/NA	Solid	8270E	563018
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	8270E	563018
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	8270E	563018
MB 240-563018/23-A	Method Blank	Total/NA	Solid	8270E	563018
LCS 240-563018/24-A	Lab Control Sample	Total/NA	Solid	8270E	563018
LCS 240-563018/25-A	Lab Control Sample	Total/NA	Solid	8270E	563018
LCS 240-563018/26-A	Lab Control Sample	Total/NA	Solid	8270E	563018

Analysis Batch: 563273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	8270E	563202
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	8270E	563202
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	8270E	563202
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	8270E	563202
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	8270E	563202
MB 240-563202/13-A	Method Blank	Total/NA	Solid	8270E	563202
LCS 240-563202/14-A	Lab Control Sample	Total/NA	Solid	8270E	563202

Analysis Batch: 563419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-15	WC-SB2598-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-16	WC-SB1852-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-19 - RA	WC-SB2621-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-21 - RA	WC-SB2624-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-23	WC-SB2405-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	8270E	563130
MB 240-563130/1-A	Method Blank	Total/NA	Solid	8270E	563130
LCS 240-563130/2-A	Lab Control Sample	Total/NA	Solid	8270E	563130
LCS 240-563130/3-A	Lab Control Sample	Total/NA	Solid	8270E	563130
240-180684-13 MS	WC-SB2650-N. DITCH	Total/NA	Solid	8270E	563130
240-180684-13 MSD	WC-SB2650-N. DITCH	Total/NA	Solid	8270E	563130

Analysis Batch: 563427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-2	WC-WS-NORTH-02 (6-7)	Total/NA	Solid	8270E	563018

Prep Batch: 563436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-7	WC-WS-NORTH-06 (5-6)	Total/NA	Solid	3540C	
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	3540C	
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	3540C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC/MS Semi VOA (Continued)

Prep Batch: 563436 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563436/22-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-563436/23-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-563436/24-A	Lab Control Sample	Total/NA	Solid	3540C	

Analysis Batch: 563684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-7	WC-WS-NORTH-06 (5-6)	Total/NA	Solid	8270E	563436
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	8270E	563436
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	8270E	563436
MB 240-563436/22-A	Method Blank	Total/NA	Solid	8270E	563436
LCS 240-563436/23-A	Lab Control Sample	Total/NA	Solid	8270E	563436
LCS 240-563436/24-A	Lab Control Sample	Total/NA	Solid	8270E	563436

GC Semi VOA

Leach Batch: 347765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	1311	
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	1311	
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	1311	
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	1311	
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	1311	

Prep Batch: 347942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	8151A	347765
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	8151A	347765
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	8151A	347765
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	8151A	347765
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	8151A	347765
MB 410-347942/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-347942/2-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 348043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	8151A	347942
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	8151A	347942
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	8151A	347942
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	8151A	347942
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	8151A	347942
MB 410-347942/1-A	Method Blank	Total/NA	Solid	8151A	347942
LCS 410-347942/2-A	Lab Control Sample	Total/NA	Solid	8151A	347942

Composite Batch: 562901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	Composite	
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	Composite	

Composite Batch: 562902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Composite	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC Semi VOA (Continued)

Composite Batch: 562902 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	Composite	
240-180684-6 MS	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Composite	
240-180684-6 MSD	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Composite	

Prep Batch: 562981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	3546	562902
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	3546	562902
MB 240-562981/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-562981/2-A	Lab Control Sample	Total/NA	Solid	3546	
240-180684-6 MS	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	3546	562902
240-180684-6 MSD	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	3546	562902

Composite Batch: 563056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	Composite	
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	Composite	

Composite Batch: 563057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	Composite	
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	Composite	

Leach Batch: 563077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	1311	562901
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	1311	562901
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	1311	563056
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	1311	563056
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	1311	

Analysis Batch: 563104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	8082A	562981
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	8082A	562981
MB 240-562981/1-A	Method Blank	Total/NA	Solid	8082A	562981
LCS 240-562981/2-A	Lab Control Sample	Total/NA	Solid	8082A	562981
240-180684-6 MS	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	8082A	562981
240-180684-6 MSD	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	8082A	562981

Prep Batch: 563205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	3510C	563077
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	3510C	563077
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	3510C	563077
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	3510C	563077
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	3510C	563077
MB 240-563205/10-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563205/11-A	Lab Control Sample	Total/NA	Solid	3510C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

GC Semi VOA

Analysis Batch: 563246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	8082A	563290
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	8082A	563290
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	8082A	563290
MB 240-563290/1-A	Method Blank	Total/NA	Solid	8082A	563290
LCS 240-563290/2-A	Lab Control Sample	Total/NA	Solid	8082A	563290

Analysis Batch: 563280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	TCLP	Solid	8081B	563205
240-180684-12	WC-WS-NORTH-COMP (6-10)	TCLP	Solid	8081B	563205
240-180684-18	WC-COMP1-N. DITCH	TCLP	Solid	8081B	563205
240-180684-24	WC-COMP2-N. DITCH	TCLP	Solid	8081B	563205
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	8081B	563205
MB 240-563205/10-A	Method Blank	Total/NA	Solid	8081B	563205
LCS 240-563205/11-A	Lab Control Sample	Total/NA	Solid	8081B	563205

Prep Batch: 563290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	3546	563057
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	3546	563057
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	3546	
MB 240-563290/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-563290/2-A	Lab Control Sample	Total/NA	Solid	3546	

LCMS

Prep Batch: 347896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	537 (mod)	
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	537 (mod)	
240-180684-18 - RA	WC-COMP1-N. DITCH	Total/NA	Solid	537 (mod)	
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	537 (mod)	
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	537 (mod)	
MB 410-347896/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-347896/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	
240-180684-B-12-E MS	240-180684-B-12-E MS	Total/NA	Solid	537 (mod)	
240-180684-B-12-F MSD	240-180684-B-12-F MSD	Total/NA	Solid	537 (mod)	

Cleanup Batch: 347899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Extract Aliquot	347896
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	Extract Aliquot	347896
240-180684-18 - RA	WC-COMP1-N. DITCH	Total/NA	Solid	Extract Aliquot	347896
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	Extract Aliquot	347896
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	Extract Aliquot	347896
MB 410-347896/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	347896
LCS 410-347896/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	347896
240-180684-B-12-E MS	240-180684-B-12-E MS	Total/NA	Solid	Extract Aliquot	347896
240-180684-B-12-F MSD	240-180684-B-12-F MSD	Total/NA	Solid	Extract Aliquot	347896

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

LCMS

Analysis Batch: 348165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	537 IDA	347899
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	537 IDA	347899
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	537 IDA	347899
240-180684-18 - RA	WC-COMP1-N. DITCH	Total/NA	Solid	537 IDA	347899
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	537 IDA	347899
MB 410-347896/1-B	Method Blank	Total/NA	Solid	537 IDA	347899
LCS 410-347896/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	347899
240-180684-B-12-E MS	240-180684-B-12-E MS	Total/NA	Solid	537 IDA	347899
240-180684-B-12-F MSD	240-180684-B-12-F MSD	Total/NA	Solid	537 IDA	347899

Metals

Leach Batch: 562925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	TCLP	Solid	1311	
240-180684-2	WC-WS-NORTH-02 (6-7)	TCLP	Solid	1311	
240-180684-3	WC-WS-NORTH-03 (7-8)	TCLP	Solid	1311	
240-180684-4	WC-WS-NORTH-04 (4-5)	TCLP	Solid	1311	
240-180684-5	WC-WS-NORTH-05 (5-6)	TCLP	Solid	1311	
240-180684-7	WC-WS-NORTH-06 (5-6)	TCLP	Solid	1311	
240-180684-8	WC-WS-NORTH-07 (3-4)	TCLP	Solid	1311	
240-180684-9	WC-WS-NORTH-08 (3-4)	TCLP	Solid	1311	
240-180684-10	WC-WS-NORTH-09 (3-4)	TCLP	Solid	1311	
240-180684-11	WC-WS-NORTH-10 (2-3)	TCLP	Solid	1311	
LB 240-562925/1-B	Method Blank	TCLP	Solid	1311	
LB 240-562925/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 563029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	TCLP	Solid	3010A	562925
240-180684-2	WC-WS-NORTH-02 (6-7)	TCLP	Solid	3010A	562925
240-180684-3	WC-WS-NORTH-03 (7-8)	TCLP	Solid	3010A	562925
240-180684-4	WC-WS-NORTH-04 (4-5)	TCLP	Solid	3010A	562925
240-180684-5	WC-WS-NORTH-05 (5-6)	TCLP	Solid	3010A	562925
240-180684-7	WC-WS-NORTH-06 (5-6)	TCLP	Solid	3010A	562925
240-180684-8	WC-WS-NORTH-07 (3-4)	TCLP	Solid	3010A	562925
240-180684-9	WC-WS-NORTH-08 (3-4)	TCLP	Solid	3010A	562925
240-180684-10	WC-WS-NORTH-09 (3-4)	TCLP	Solid	3010A	562925
240-180684-11	WC-WS-NORTH-10 (2-3)	TCLP	Solid	3010A	562925
LB 240-562925/1-B	Method Blank	TCLP	Solid	3010A	562925
MB 240-563029/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563029/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 563030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	TCLP	Solid	7470A	562925
240-180684-2	WC-WS-NORTH-02 (6-7)	TCLP	Solid	7470A	562925
240-180684-3	WC-WS-NORTH-03 (7-8)	TCLP	Solid	7470A	562925
240-180684-4	WC-WS-NORTH-04 (4-5)	TCLP	Solid	7470A	562925
240-180684-5	WC-WS-NORTH-05 (5-6)	TCLP	Solid	7470A	562925
240-180684-7	WC-WS-NORTH-06 (5-6)	TCLP	Solid	7470A	562925

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Metals (Continued)

Prep Batch: 563030 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-8	WC-WS-NORTH-07 (3-4)	TCLP	Solid	7470A	562925
240-180684-9	WC-WS-NORTH-08 (3-4)	TCLP	Solid	7470A	562925
240-180684-10	WC-WS-NORTH-09 (3-4)	TCLP	Solid	7470A	562925
240-180684-11	WC-WS-NORTH-10 (2-3)	TCLP	Solid	7470A	562925
LB 240-562925/1-C	Method Blank	TCLP	Solid	7470A	562925
MB 240-563030/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-563030/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Leach Batch: 563077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	1311	
LB 240-563077/1-B	Method Blank	TCLP	Solid	1311	
LB 240-563077/1-C	Method Blank	TCLP	Solid	1311	

Leach Batch: 563080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	TCLP	Solid	1311	
240-180684-14	WC-SB1692-N. DITCH	TCLP	Solid	1311	
240-180684-15	WC-SB2598-N. DITCH	TCLP	Solid	1311	
240-180684-16	WC-SB1852-N. DITCH	TCLP	Solid	1311	
240-180684-17	WC-SB1865-N. DITCH	TCLP	Solid	1311	
240-180684-19	WC-SB2621-N. DITCH	TCLP	Solid	1311	
240-180684-20	WC-SB1634-N. DITCH	TCLP	Solid	1311	
240-180684-21	WC-SB2624-N. DITCH	TCLP	Solid	1311	
240-180684-22	WC-SB2474-N. DITCH	TCLP	Solid	1311	
240-180684-23	WC-SB2405-N. DITCH	TCLP	Solid	1311	
LB 240-563080/1-B	Method Blank	TCLP	Solid	1311	
LB 240-563080/1-C	Method Blank	TCLP	Solid	1311	
240-180684-13 MS	WC-SB2650-N. DITCH	TCLP	Solid	1311	
240-180684-13 MSD	WC-SB2650-N. DITCH	TCLP	Solid	1311	

Prep Batch: 563166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	3010A	563077
LB 240-563077/1-B	Method Blank	TCLP	Solid	3010A	563077
MB 240-563166/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563166/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 563167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	7470A	563077
LB 240-563077/1-C	Method Blank	TCLP	Solid	7470A	563077
MB 240-563167/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-563167/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Prep Batch: 563181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	TCLP	Solid	3010A	563080
240-180684-14	WC-SB1692-N. DITCH	TCLP	Solid	3010A	563080
240-180684-15	WC-SB2598-N. DITCH	TCLP	Solid	3010A	563080
240-180684-16	WC-SB1852-N. DITCH	TCLP	Solid	3010A	563080

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Metals (Continued)

Prep Batch: 563181 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-17	WC-SB1865-N. DITCH	TCLP	Solid	3010A	563080
240-180684-19	WC-SB2621-N. DITCH	TCLP	Solid	3010A	563080
240-180684-20	WC-SB1634-N. DITCH	TCLP	Solid	3010A	563080
240-180684-21	WC-SB2624-N. DITCH	TCLP	Solid	3010A	563080
240-180684-22	WC-SB2474-N. DITCH	TCLP	Solid	3010A	563080
240-180684-23	WC-SB2405-N. DITCH	TCLP	Solid	3010A	563080
LB 240-563080/1-B	Method Blank	TCLP	Solid	3010A	563080
MB 240-563181/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563181/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180684-13 MS	WC-SB2650-N. DITCH	TCLP	Solid	3010A	563080
240-180684-13 MSD	WC-SB2650-N. DITCH	TCLP	Solid	3010A	563080

Prep Batch: 563182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563080
240-180684-14	WC-SB1692-N. DITCH	TCLP	Solid	7470A	563080
240-180684-15	WC-SB2598-N. DITCH	TCLP	Solid	7470A	563080
240-180684-16	WC-SB1852-N. DITCH	TCLP	Solid	7470A	563080
240-180684-17	WC-SB1865-N. DITCH	TCLP	Solid	7470A	563080
240-180684-19	WC-SB2621-N. DITCH	TCLP	Solid	7470A	563080
240-180684-20	WC-SB1634-N. DITCH	TCLP	Solid	7470A	563080
240-180684-21	WC-SB2624-N. DITCH	TCLP	Solid	7470A	563080
240-180684-22	WC-SB2474-N. DITCH	TCLP	Solid	7470A	563080
240-180684-23	WC-SB2405-N. DITCH	TCLP	Solid	7470A	563080
LB 240-563080/1-C	Method Blank	TCLP	Solid	7470A	563080
MB 240-563182/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-563182/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180684-13 MS	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563080
240-180684-13 MSD	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563080

Analysis Batch: 563217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	TCLP	Solid	7470A	563030
240-180684-2	WC-WS-NORTH-02 (6-7)	TCLP	Solid	7470A	563030
240-180684-3	WC-WS-NORTH-03 (7-8)	TCLP	Solid	7470A	563030
240-180684-4	WC-WS-NORTH-04 (4-5)	TCLP	Solid	7470A	563030
240-180684-5	WC-WS-NORTH-05 (5-6)	TCLP	Solid	7470A	563030
240-180684-7	WC-WS-NORTH-06 (5-6)	TCLP	Solid	7470A	563030
240-180684-8	WC-WS-NORTH-07 (3-4)	TCLP	Solid	7470A	563030
240-180684-9	WC-WS-NORTH-08 (3-4)	TCLP	Solid	7470A	563030
240-180684-10	WC-WS-NORTH-09 (3-4)	TCLP	Solid	7470A	563030
240-180684-11	WC-WS-NORTH-10 (2-3)	TCLP	Solid	7470A	563030
LB 240-562925/1-C	Method Blank	TCLP	Solid	7470A	563030
MB 240-563030/2-A	Method Blank	Total/NA	Solid	7470A	563030
LCS 240-563030/3-A	Lab Control Sample	Total/NA	Solid	7470A	563030

Analysis Batch: 563244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	TCLP	Solid	6010D	563029
240-180684-2	WC-WS-NORTH-02 (6-7)	TCLP	Solid	6010D	563029
240-180684-3	WC-WS-NORTH-03 (7-8)	TCLP	Solid	6010D	563029

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Metals (Continued)

Analysis Batch: 563244 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-4	WC-WS-NORTH-04 (4-5)	TCLP	Solid	6010D	563029
240-180684-5	WC-WS-NORTH-05 (5-6)	TCLP	Solid	6010D	563029
240-180684-7	WC-WS-NORTH-06 (5-6)	TCLP	Solid	6010D	563029
240-180684-8	WC-WS-NORTH-07 (3-4)	TCLP	Solid	6010D	563029
240-180684-9	WC-WS-NORTH-08 (3-4)	TCLP	Solid	6010D	563029
240-180684-10	WC-WS-NORTH-09 (3-4)	TCLP	Solid	6010D	563029
240-180684-11	WC-WS-NORTH-10 (2-3)	TCLP	Solid	6010D	563029
LB 240-562925/1-B	Method Blank	TCLP	Solid	6010D	563029
MB 240-563029/2-A	Method Blank	Total/NA	Solid	6010D	563029
LCS 240-563029/3-A	Lab Control Sample	Total/NA	Solid	6010D	563029

Analysis Batch: 563338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563182
240-180684-14	WC-SB1692-N. DITCH	TCLP	Solid	7470A	563182
240-180684-15	WC-SB2598-N. DITCH	TCLP	Solid	7470A	563182
240-180684-16	WC-SB1852-N. DITCH	TCLP	Solid	7470A	563182
240-180684-17	WC-SB1865-N. DITCH	TCLP	Solid	7470A	563182
240-180684-19	WC-SB2621-N. DITCH	TCLP	Solid	7470A	563182
240-180684-20	WC-SB1634-N. DITCH	TCLP	Solid	7470A	563182
240-180684-21	WC-SB2624-N. DITCH	TCLP	Solid	7470A	563182
240-180684-22	WC-SB2474-N. DITCH	TCLP	Solid	7470A	563182
240-180684-23	WC-SB2405-N. DITCH	TCLP	Solid	7470A	563182
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	7470A	563167
LB 240-563077/1-C	Method Blank	TCLP	Solid	7470A	563167
LB 240-563080/1-C	Method Blank	TCLP	Solid	7470A	563182
MB 240-563167/2-A	Method Blank	Total/NA	Solid	7470A	563167
MB 240-563182/2-A	Method Blank	Total/NA	Solid	7470A	563182
LCS 240-563167/3-A	Lab Control Sample	Total/NA	Solid	7470A	563167
LCS 240-563182/3-A	Lab Control Sample	Total/NA	Solid	7470A	563182
240-180684-13 MS	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563182
240-180684-13 MSD	WC-SB2650-N. DITCH	TCLP	Solid	7470A	563182

Analysis Batch: 563358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	TCLP	Solid	6010D	563181
240-180684-14	WC-SB1692-N. DITCH	TCLP	Solid	6010D	563181
240-180684-15	WC-SB2598-N. DITCH	TCLP	Solid	6010D	563181
240-180684-16	WC-SB1852-N. DITCH	TCLP	Solid	6010D	563181
240-180684-17	WC-SB1865-N. DITCH	TCLP	Solid	6010D	563181
240-180684-19	WC-SB2621-N. DITCH	TCLP	Solid	6010D	563181
240-180684-20	WC-SB1634-N. DITCH	TCLP	Solid	6010D	563181
240-180684-21	WC-SB2624-N. DITCH	TCLP	Solid	6010D	563181
240-180684-22	WC-SB2474-N. DITCH	TCLP	Solid	6010D	563181
240-180684-23	WC-SB2405-N. DITCH	TCLP	Solid	6010D	563181
240-180684-25	WC-RT1538A-ST. SWEEPINGS	TCLP	Solid	6010D	563166
LB 240-563077/1-B	Method Blank	TCLP	Solid	6010D	563166
LB 240-563080/1-B	Method Blank	TCLP	Solid	6010D	563181
MB 240-563166/2-A	Method Blank	Total/NA	Solid	6010D	563166
MB 240-563181/2-A	Method Blank	Total/NA	Solid	6010D	563181
LCS 240-563166/3-A	Lab Control Sample	Total/NA	Solid	6010D	563166

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Metals (Continued)

Analysis Batch: 563358 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-563181/3-A	Lab Control Sample	Total/NA	Solid	6010D	563181
240-180684-13 MS	WC-SB2650-N. DITCH	TCLP	Solid	6010D	563181
240-180684-13 MSD	WC-SB2650-N. DITCH	TCLP	Solid	6010D	563181

General Chemistry

Analysis Batch: 562900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-1	WC-WS-NORTH-01 (4-5)	Total/NA	Solid	Moisture	
240-180684-2	WC-WS-NORTH-02 (6-7)	Total/NA	Solid	Moisture	
240-180684-4	WC-WS-NORTH-04 (4-5)	Total/NA	Solid	Moisture	
240-180684-5	WC-WS-NORTH-05 (5-6)	Total/NA	Solid	Moisture	
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Moisture	562902
240-180684-7	WC-WS-NORTH-06 (5-6)	Total/NA	Solid	Moisture	
240-180684-8	WC-WS-NORTH-07 (3-4)	Total/NA	Solid	Moisture	
240-180684-9	WC-WS-NORTH-08 (3-4)	Total/NA	Solid	Moisture	
240-180684-10	WC-WS-NORTH-09 (3-4)	Total/NA	Solid	Moisture	
240-180684-11	WC-WS-NORTH-10 (2-3)	Total/NA	Solid	Moisture	
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	Moisture	562902
240-180684-D-14 DU	240-180684-D-14 DU	Total/NA	Solid	Moisture	

Composite Batch: 562902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	Composite	
240-180684-12	WC-WS-NORTH-COMP (6-10)	Total/NA	Solid	Composite	

Analysis Batch: 563043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-3	WC-WS-NORTH-03 (7-8)	Total/NA	Solid	Moisture	
240-180684-17	WC-SB1865-N. DITCH	Total/NA	Solid	Moisture	
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	Moisture	563057
240-180684-19	WC-SB2621-N. DITCH	Total/NA	Solid	Moisture	
240-180684-20	WC-SB1634-N. DITCH	Total/NA	Solid	Moisture	
240-180684-21	WC-SB2624-N. DITCH	Total/NA	Solid	Moisture	
240-180684-22	WC-SB2474-N. DITCH	Total/NA	Solid	Moisture	
240-180684-23	WC-SB2405-N. DITCH	Total/NA	Solid	Moisture	
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	Moisture	563057
240-180684-25	WC-RT1538A-ST. SWEEPINGS	Total/NA	Solid	Moisture	
240-180684-19 DU	WC-SB2621-N. DITCH	Total/NA	Solid	Moisture	

Composite Batch: 563057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-18	WC-COMP1-N. DITCH	Total/NA	Solid	Composite	
240-180684-24	WC-COMP2-N. DITCH	Total/NA	Solid	Composite	

Analysis Batch: 563185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-13	WC-SB2650-N. DITCH	Total/NA	Solid	Moisture	
240-180684-14	WC-SB1692-N. DITCH	Total/NA	Solid	Moisture	
240-180684-15	WC-SB2598-N. DITCH	Total/NA	Solid	Moisture	
240-180684-16	WC-SB1852-N. DITCH	Total/NA	Solid	Moisture	

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:19
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:38
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-01 (4-5)

Lab Sample ID: 240-180684-1

Date Collected: 02/20/23 10:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 18:28
Total/NA	Prep	5035			562918	LAM	EET CAN	02/21/23 13:30
Total/NA	Analysis	8260D		5	563308	CS	EET CAN	02/24/23 14:32
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		10	563266	JMG	EET CAN	02/24/23 15:47

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Date Collected: 02/20/23 10:35

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:23
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:41
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-02 (6-7)

Lab Sample ID: 240-180684-2

Date Collected: 02/20/23 10:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 76.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 19:43
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		2	563427	JMG	EET CAN	02/25/23 16:59

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Date Collected: 02/20/23 10:50

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:27
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:43
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 11:26

Client Sample ID: WC-WS-NORTH-03 (7-8)

Lab Sample ID: 240-180684-3

Date Collected: 02/20/23 10:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 20:08
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		1	563266	JMG	EET CAN	02/24/23 13:22

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Date Collected: 02/20/23 11:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:32
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:45
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-04 (4-5)

Lab Sample ID: 240-180684-4

Date Collected: 02/20/23 11:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 98.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 20:34
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		4	563266	JMG	EET CAN	02/24/23 15:23

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Date Collected: 02/20/23 11:05

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:36
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:47
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-05 (5-6)

Lab Sample ID: 240-180684-5

Date Collected: 02/20/23 11:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 72.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		40	563308	CS	EET CAN	02/24/23 14:57
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		20	563266	JMG	EET CAN	02/24/23 16:11

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563082	DRJ	EET CAN	02/22/23 16:00 - 02/23/23 08:55 ¹
TCLP	Analysis	8260D		1	563142	TJL1	EET CAN	02/23/23 17:23
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563202	SDE	EET CAN	02/23/23 12:44
TCLP	Analysis	8270E		1	563273	JMG	EET CAN	02/24/23 18:09
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563205	SDE	EET CAN	02/23/23 12:51
TCLP	Analysis	8081B		1	563280	BPM	EET CAN	02/24/23 11:13
TCLP	Leach	1311			347765	UNWS	ELLE	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	8151A			347942	UKL2	ELLE	02/24/23 19:47
TCLP	Analysis	8151A		1	348043	UAMZ	ELLE	02/27/23 05:47
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 11:57
Total/NA	Composite	Composite			562902	DRJ	EET CAN	02/21/23 12:13

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562902	DRJ	EET CAN	02/21/23 12:13
Total/NA	Prep	3546			562981	AJ	EET CAN	02/22/23 08:41
Total/NA	Analysis	8082A		1	563104	LSH	EET CAN	02/23/23 09:51
Total/NA	Prep	537 (mod)			347896	K9VR	ELLE	02/24/23 17:55
Total/NA	Cleanup	Extract Aliquot			347899	K9VR	ELLE	02/24/23 18:22
Total/NA	Analysis	537 IDA		1	348165	VK3G	ELLE	02/27/23 12:01

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Date Collected: 02/20/23 11:20

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:49
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:49
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-06 (5-6)

Lab Sample ID: 240-180684-7

Date Collected: 02/20/23 11:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 21:24
Total/NA	Prep	3540C			563436	BMB	EET CAN	02/25/23 15:12
Total/NA	Analysis	8270E		4	563684	JMG	EET CAN	02/28/23 13:08

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:53
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:51
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-07 (3-4)

Lab Sample ID: 240-180684-8

Date Collected: 02/20/23 11:46

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 21:49
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		4	563308	CS	EET CAN	02/24/23 15:48
Total/NA	Prep	3540C			563436	BMB	EET CAN	02/25/23 15:12
Total/NA	Analysis	8270E		4	563684	JMG	EET CAN	02/28/23 12:20

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 12:57
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:53
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-08 (3-4)

Lab Sample ID: 240-180684-9

Date Collected: 02/20/23 11:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 73.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1.6666	563220	CS	EET CAN	02/23/23 22:14
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 15:23
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		4	563266	JMG	EET CAN	02/24/23 14:59

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 13:02
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 16:30 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 15:55
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-09 (3-4)

Lab Sample ID: 240-180684-10

Date Collected: 02/20/23 12:05

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 22:40
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 16:13
Total/NA	Prep	3540C			563018	BMB	EET CAN	02/22/23 09:34
Total/NA	Analysis	8270E		1	563266	JMG	EET CAN	02/24/23 14:11

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 15:32 - 02/22/23 09:05 ¹
TCLP	Prep	3010A			563029	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	6010D		1	563244	RKT	EET CAN	02/23/23 13:06
TCLP	Leach	1311			562925	DRJ	EET CAN	02/21/23 15:32 - 02/22/23 09:05 ¹
TCLP	Prep	7470A			563030	AJC	EET CAN	02/22/23 12:00
TCLP	Analysis	7470A		1	563217	DSH	EET CAN	02/23/23 16:42
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 14:25

Client Sample ID: WC-WS-NORTH-10 (2-3)

Lab Sample ID: 240-180684-11

Date Collected: 02/20/23 12:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		10	563220	CS	EET CAN	02/23/23 23:05
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 16:39
Total/NA	Prep	3540C			563436	BMB	EET CAN	02/25/23 15:12
Total/NA	Analysis	8270E		4	563684	JMG	EET CAN	02/28/23 12:44

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563082	DRJ	EET CAN	02/22/23 16:00 - 02/23/23 08:55 ¹
TCLP	Analysis	8260D		1	563142	TJL1	EET CAN	02/23/23 17:46
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563202	SDE	EET CAN	02/23/23 12:44
TCLP	Analysis	8270E		1	563273	JMG	EET CAN	02/24/23 18:34

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			562901	DRJ	EET CAN	02/21/23 12:12
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563205	SDE	EET CAN	02/23/23 12:51
TCLP	Analysis	8081B		1	563280	BPM	EET CAN	02/24/23 11:30
TCLP	Leach	1311			347765	UNWS	ELLE	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	8151A			347942	UKL2	ELLE	02/24/23 19:47
TCLP	Analysis	8151A		1	348043	UAMZ	ELLE	02/27/23 06:15
Total/NA	Analysis	Moisture		1	562900	MS	EET CAN	02/21/23 11:57
Total/NA	Composite	Composite			562902	DRJ	EET CAN	02/21/23 12:13

Client Sample ID: WC-WS-NORTH-COMP (6-10)

Lab Sample ID: 240-180684-12

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			562902	DRJ	EET CAN	02/21/23 12:13
Total/NA	Prep	3546			562981	AJ	EET CAN	02/22/23 08:41
Total/NA	Analysis	8082A		1	563104	LSH	EET CAN	02/23/23 10:43
Total/NA	Prep	537 (mod)			347896	K9VR	ELLE	02/24/23 17:55
Total/NA	Cleanup	Extract Aliquot			347899	K9VR	ELLE	02/24/23 18:22
Total/NA	Analysis	537 IDA		1	348165	VK3G	ELLE	02/27/23 12:12

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		5	563358	KLC	EET CAN	02/24/23 10:50
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 09:45
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-SB2650-N. DITCH

Lab Sample ID: 240-180684-13

Date Collected: 02/20/23 17:40

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 66.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 23:30
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 17:04
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 13:54

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:16
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 09:56
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-SB1692-N. DITCH

Lab Sample ID: 240-180684-14

Date Collected: 02/20/23 17:55

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 63.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/23/23 23:55
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 17:29
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 15:37

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Date Collected: 02/20/23 18:10

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:21
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 09:58
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-SB2598-N. DITCH

Lab Sample ID: 240-180684-15

Date Collected: 02/20/23 18:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 64.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 00:21
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		5	563419	MRU	EET CAN	02/25/23 17:47

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Date Collected: 02/20/23 18:20

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:25
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:00
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-SB1852-N. DITCH

Lab Sample ID: 240-180684-16

Date Collected: 02/20/23 18:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 69.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			562940	LAM	EET CAN	02/21/23 19:38
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 00:46
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 16:03

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		2	563358	KLC	EET CAN	02/24/23 12:54
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:02
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-SB1865-N. DITCH

Lab Sample ID: 240-180684-17

Date Collected: 02/21/23 13:15

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 55.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/22/23 11:38
Total/NA	Analysis	8260D		1	563458	CS	EET CAN	02/26/23 19:07
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		66.6666	563220	CS	EET CAN	02/24/23 01:11
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 16:29

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563082	DRJ	EET CAN	02/22/23 16:00 - 02/23/23 08:55 ¹
TCLP	Analysis	8260D		1	563142	TJL1	EET CAN	02/23/23 18:09
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563202	SDE	EET CAN	02/23/23 12:44
TCLP	Analysis	8270E		1	563273	JMG	EET CAN	02/24/23 18:58
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563205	SDE	EET CAN	02/23/23 12:51
TCLP	Analysis	8081B		1	563280	BPM	EET CAN	02/24/23 11:47
TCLP	Leach	1311			347765	UNWS	ELLE	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	8151A			347942	UKL2	ELLE	02/24/23 19:47
TCLP	Analysis	8151A		1	348043	UAMZ	ELLE	02/27/23 06:43
Total/NA	Composite	Composite			563057	DRJ	EET CAN	02/22/23 12:00
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-180684-18

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 61.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			563057	DRJ	EET CAN	02/22/23 12:00
Total/NA	Prep	3546			563290	AJ	EET CAN	02/24/23 09:04
Total/NA	Analysis	8082A		1	563246	LSH	EET CAN	02/24/23 12:52
Total/NA	Prep	537 (mod)			347896	K9VR	ELLE	02/24/23 17:55
Total/NA	Cleanup	Extract Aliquot			347899	K9VR	ELLE	02/24/23 18:22
Total/NA	Analysis	537 IDA		1	348165	VK3G	ELLE	02/27/23 12:45
Total/NA	Prep	537 (mod)	RA		347896	K9VR	ELLE	02/24/23 17:55
Total/NA	Cleanup	Extract Aliquot	RA		347899	K9VR	ELLE	02/24/23 18:22
Total/NA	Analysis	537 IDA	RA	1	348165	VK3G	ELLE	02/27/23 14:58

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:42
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:04
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2621-N. DITCH

Lab Sample ID: 240-180684-19

Date Collected: 02/21/23 13:35

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 47.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 01:36
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		2.857	563308	CS	EET CAN	02/24/23 17:55
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		25	563419	MRU	EET CAN	02/25/23 12:36
Total/NA	Prep	3540C	RA		563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E	RA	50	563419	MRU	EET CAN	02/25/23 18:12

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:46
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:10
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-SB1634-N. DITCH

Lab Sample ID: 240-180684-20

Date Collected: 02/21/23 13:50

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 40.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563391	CS	EET CAN	02/22/23 11:38
Total/NA	Analysis	8260D		1	563382	CS	EET CAN	02/25/23 02:06
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 02:02
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563308	CS	EET CAN	02/24/23 18:20
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 13:28

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		2	563358	KLC	EET CAN	02/24/23 12:59

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:12
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-SB2624-N. DITCH

Lab Sample ID: 240-180684-21

Date Collected: 02/21/23 14:10

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 59.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 02:27
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		2	563308	CS	EET CAN	02/24/23 18:45
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		50	563419	MRU	EET CAN	02/25/23 12:10
Total/NA	Prep	3540C	RA		563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E	RA	100	563419	MRU	EET CAN	02/25/23 15:11

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 11:55
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:15
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-SB2474-N. DITCH

Lab Sample ID: 240-180684-22

Date Collected: 02/21/23 14:20

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 02:52
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		4	563308	CS	EET CAN	02/24/23 19:10
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		6.667	563419	MRU	EET CAN	02/25/23 17:21

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Date Collected: 02/21/23 14:30

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563181	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 12:00
TCLP	Leach	1311			563080	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563182	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:17
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-SB2405-N. DITCH

Lab Sample ID: 240-180684-23

Date Collected: 02/21/23 14:30

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 65.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 03:18
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		10	563419	MRU	EET CAN	02/25/23 16:55

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563082	DRJ	EET CAN	02/22/23 16:00 - 02/23/23 08:55 ¹
TCLP	Analysis	8260D		1	563142	TJL1	EET CAN	02/23/23 18:32
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563202	SDE	EET CAN	02/23/23 12:44
TCLP	Analysis	8270E		1	563273	JMG	EET CAN	02/24/23 19:22
TCLP	Composite	Composite			563056	DRJ	EET CAN	02/22/23 12:00
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563205	SDE	EET CAN	02/23/23 12:51
TCLP	Analysis	8081B		1	563280	BPM	EET CAN	02/24/23 12:04
TCLP	Leach	1311			347765	UNWS	ELLE	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	8151A			347942	UKL2	ELLE	02/24/23 19:47
TCLP	Analysis	8151A		1	348043	UAMZ	ELLE	02/27/23 07:11
Total/NA	Composite	Composite			563057	DRJ	EET CAN	02/22/23 12:00
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Client Sample ID: WC-COMP2-N. DITCH

Lab Sample ID: 240-180684-24

Date Collected: 02/21/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 74.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			563057	DRJ	EET CAN	02/22/23 12:00
Total/NA	Prep	3546			563290	AJ	EET CAN	02/24/23 09:04
Total/NA	Analysis	8082A		1	563246	LSH	EET CAN	02/24/23 13:10
Total/NA	Prep	537 (mod)			347896	K9VR	ELLE	02/24/23 17:55
Total/NA	Cleanup	Extract Aliquot			347899	K9VR	ELLE	02/24/23 18:22
Total/NA	Analysis	537 IDA		1	348165	VK3G	ELLE	02/27/23 15:10

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563082	DRJ	EET CAN	02/22/23 16:00 - 02/23/23 08:55 ¹
TCLP	Analysis	8260D		1	563142	TJL1	EET CAN	02/23/23 18:56
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563202	SDE	EET CAN	02/23/23 12:44
TCLP	Analysis	8270E		1	563273	JMG	EET CAN	02/24/23 19:47
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3510C			563205	SDE	EET CAN	02/23/23 12:51
TCLP	Analysis	8081B		1	563280	BPM	EET CAN	02/24/23 12:21
TCLP	Leach	1311			347765	UNWS	ELLE	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	8151A			347942	UKL2	ELLE	02/24/23 19:47
TCLP	Analysis	8151A		1	348043	UAMZ	ELLE	02/27/23 07:38
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	3010A			563166	MRL	EET CAN	02/23/23 14:00
TCLP	Analysis	6010D		1	563358	KLC	EET CAN	02/24/23 12:45
TCLP	Leach	1311			563077	DRJ	EET CAN	02/22/23 16:40 - 02/23/23 08:55 ¹
TCLP	Prep	7470A			563167	MRL	EET CAN	02/23/23 12:00
TCLP	Analysis	7470A		1	563338	MRL	EET CAN	02/24/23 10:49
Total/NA	Analysis	Moisture		1	563043	BLW	EET CAN	02/22/23 13:18

Client Sample ID: WC-RT1538A-ST. SWEEPINGS

Lab Sample ID: 240-180684-25

Date Collected: 02/21/23 14:45

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563078	CS	EET CAN	02/22/23 19:09
Total/NA	Analysis	8260D		1	563220	CS	EET CAN	02/24/23 03:43
Total/NA	Prep	3540C			563130	AJ	EET CAN	02/23/23 08:32
Total/NA	Analysis	8270E		20	563419	MRU	EET CAN	02/25/23 13:02
Total/NA	Prep	3546			563290	AJ	EET CAN	02/24/23 09:04
Total/NA	Analysis	8082A		1	563246	LSH	EET CAN	02/24/23 13:27

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-27-23 *
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Barberton Facility

Client Arcadis

Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-21-23

Opened on 2-22-23

QuP

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N) and sample type of grab/comp (Y/N)?
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA
- 14. Were VOAs on the COC? Yes No NA
- 15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180684-1

Login Number: 180684

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/24/23 10:52 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		C8PFOA (26-159)	C8PFOS (41-154)
240-180684-6	WC-WS-NORTH-COMP (1-5)	78	84
240-180684-12	WC-WS-NORTH-COMP (6-10)	74	83
240-180684-18 - RA	WC-COMP1-N. DITCH	70	79
240-180684-18	WC-COMP1-N. DITCH	72	79
240-180684-24	WC-COMP2-N. DITCH	76	80
240-180684-B-12-E MS	240-180684-B-12-E MS	74	84
240-180684-B-12-F MSD	240-180684-B-12-F MSD	69	76
LCS 410-347896/2-B	Lab Control Sample	78	87
MB 410-347896/1-B	Method Blank	85	91

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/10/2023 9:33:03 AM Revision 1

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180684-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396

Generated
3/10/2023 9:33:03 AM
Revision 1



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	10
QC Association Summary	12
Lab Chronicle	13
Certification Summary	14
Chain of Custody	16
Receipt Checklists	19
Isotope Dilution Summary	20

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Job ID: 240-180684-2

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-180684-2**

Receipt

The samples were received on 2/20/2023 9:50 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 0.2°C, 0.5°C, 1.8°C, 2.1°C and 3.1°C

Report revised on 3/10/2023 to report Total Dioxins calculations.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180684-6	WC-WS-NORTH-COMP (1-5)	Solid	02/20/23 00:00	02/20/23 21:50

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-2

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	220		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	61		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	5.6	J	6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	18		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	8.3		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	13		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	16		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	5.5	J	6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	11		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	11		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	5.2	J	6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	16		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	25		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	0.98	J I	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	4.7		1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
OCDD	1300		12	2.5	ng/Kg	1	✳	8290A	Total/NA
OCDF	84		12	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	110		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	180		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	410		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	130		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	63	I	6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	250		6.1	2.5	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	37	I	1.2	0.25	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	160		1.2	0.25	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 81.2

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	220		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,4,6,7,8-HpCDF	61		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,4,7,8-HxCDD	5.6	J	6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,4,7,8-HxCDF	18		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,4,7,8,9-HpCDF	8.3		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,6,7,8-HxCDD	13		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,6,7,8-HxCDF	16		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,7,8-PeCDD	5.5	J	6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,7,8-PeCDF	11		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,7,8,9-HxCDD	11		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
1,2,3,7,8,9-HxCDF	5.2	J	6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
2,3,4,6,7,8-HxCDF	16		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
2,3,4,7,8-PeCDF	25		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
2,3,7,8-TCDD	0.98	J I	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
2,3,7,8-TCDF	4.7		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
OCDD	1300		12	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
OCDF	84		12	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total HxCDD	110		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total HxCDF	180		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total HpCDD	410		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total HpCDF	130		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total PeCDD	63	I	6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total PeCDF	250		6.1	2.5	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total TCDD	37	I	1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1
Total TCDF	160		1.2	0.25	ng/Kg	✳	03/06/23 12:43	03/07/23 23:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	82		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-OCDD	83		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-2,3,7,8-TCDF	76		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-2,3,7,8-TCDD	73		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-2,3,4,7,8-PeCDF	73		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-2,3,4,6,7,8-HxCDF	78		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,7,8,9-HxCDF	80		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,7,8,9-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,7,8-PeCDF	71		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,7,8-PeCDD	67		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,6,7,8-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,6,7,8-HxCDD	79		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,4,7,8,9-HpCDF	80		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,4,7,8-HxCDF	78		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,4,7,8-HxCDD	77		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,4,6,7,8-HpCDF	80		40 - 135	03/06/23 12:43	03/07/23 23:28	1
13C-1,2,3,4,6,7,8-HpCDD	79		40 - 135	03/06/23 12:43	03/07/23 23:28	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-350542/1-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350542

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,6,7,8-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8,9-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDD	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDF	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	89		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-OCDD	88		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDD	68		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,6,7,8-HxCDF	81		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDD	83		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDD	69		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8,9-HpCDF	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDD	78		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-350542/2-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDD	100	93.6		ng/Kg		94	77 - 127
1,2,3,4,6,7,8-HpCDF	100	94.3		ng/Kg		94	77 - 127
1,2,3,4,7,8-HxCDD	100	98.7		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDF	100	97.8		ng/Kg		98	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.8		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	103		ng/Kg		103	76 - 127
1,2,3,6,7,8-HxCDF	100	97.3		ng/Kg		97	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	101		ng/Kg		101	75 - 129
1,2,3,7,8,9-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,7,8,9-HxCDF	100	97.4		ng/Kg		97	76 - 126
2,3,4,6,7,8-HxCDF	100	94.2		ng/Kg		94	78 - 128
2,3,4,7,8-PeCDF	100	104		ng/Kg		104	75 - 131
2,3,7,8-TCDD	20.0	19.9		ng/Kg		99	68 - 142
2,3,7,8-TCDF	20.0	17.7		ng/Kg		88	70 - 133
OCDD	200	202		ng/Kg		101	77 - 125
OCDF	200	199		ng/Kg		99	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	91		40 - 135
13C-OCDD	92		40 - 135
13C-2,3,7,8-TCDF	75		40 - 135
13C-2,3,7,8-TCDD	72		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-2,3,4,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDD	89		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	92		40 - 135
13C-1,2,3,4,7,8-HxCDF	83		40 - 135
13C-1,2,3,4,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	91		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	90		40 - 135

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Specialty Organics

Prep Batch: 350542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-350542/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 350921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-350542/1-A	Method Blank	Total/NA	Solid	8290A	350542
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	8290A	350542

Analysis Batch: 351132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180684-6	WC-WS-NORTH-COMP (1-5)	Total/NA	Solid	8290A	350542

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Client Sample ID: WC-WS-NORTH-COMP (1-5)

Lab Sample ID: 240-180684-6

Date Collected: 02/20/23 00:00

Matrix: Solid

Date Received: 02/20/23 21:50

Percent Solids: 81.2

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/07/23 23:28

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180684-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Chain of Custody Record

Zooker



1 of 1
 Environment Testing

Client Information		Lab PII: DeIMonico, Michael		Carrier Tracking No(s): 240-105064-37646.2			
Client Contact: Grace Gegick		E-Mail: Michael.DeIMonico@eurofins.com		Page: Page 2 of 4			
Company: ARCADIS U.S., Inc.		PWSID: Exemption 6 - PII		Job #:			
Address: 284 Cramer Creek Court		Due Date Requested:		Preservation Codes:			
City: Dublin		TAT Requested (days):		M - Hexane			
State, Zip: OH, 43017		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		N - None			
Phone:		PO #: Purchase Order not required		O - AsNaO2			
Email: Grace.Gegick@arcadis.com		WO #:		P - Na2O4S			
Project Name: Norfolk Southern - ER		Project #: 24030745		D - Nitric Acid			
Site:		SSOW#:		E - NaHSO4			
				R - Na2SO3			
				S - H2SO4			
				G - Amchlor			
				H - Ascorbic Acid			
				I - Ice			
				J - DI Water			
				V - MCAA			
				W - pH 4-5			
				K - EDTA			
				L - EDA			
				Z - other (specify)			
				Other:			
				Total Number of Containers			
				Special Instructions/Note:			
				<p>240-180684 Chain of Custody</p> <p>Includes SB 24501, SB 16912, SB 2996, SB 1852, SB 18065, SB 2424, SB 2411, SB 2408</p>			
WC-SB1865 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1315	
WC-SB2621 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1335	
WC-SB1634 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1350	
WC-SB2624 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1410	
WC-SB2974 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1420	
WC-SB2405 - N.Ditch		Sample Date: 2/21/23				Sample Time: 1435	
WC-SB COMP - N.Ditch		Sample Date: 2/20-21/23				Sample Time: -	
WC-COMP 2 - N.Ditch		Sample Date: 2/21/23				Sample Time: -	
WC-RT1588A - St. Sweeping		Sample Date: 2/21/23				Sample Time: 1445	
Possible Hazard Identification		Sample Matrix (Hexane, Solid, Organic, Other)		Sample Preservation Code			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Solid		G			
Deliverable Requested: I, II, III, IV, Other (specify)		Solid		G			
Empty Kit Relinquished by:		Solid		G			
Relinquished by: <i>M. Stee</i>		Solid		G			
Relinquished by: <i>Malissa Loav</i>		Solid		G			
Relinquished by:		Solid		G			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No:		Custody Seal No:			



Barberton Facility

Client Arcadis

Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-21-23

Opened on 2-22-23

QuP

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N) and sample type of grab/comp (Y/N)?
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180684-2

Login Number: 180684

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/24/23 10:52 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180684-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-180684-6	WC-WS-NORTH-COMP (1-5)	82	83	76	73	73	78	80	80
LCS 410-350542/2-A	Lab Control Sample	91	92	75	72	77	87	87	89
MB 410-350542/1-A	Method Blank	89	88	72	68	76	81	82	83

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-180684-6	WC-WS-NORTH-COMP (1-5)	71	67	82	79	80	78	77	80
LCS 410-350542/2-A	Lab Control Sample	76	70	87	84	92	83	84	91
MB 410-350542/1-A	Method Blank	72	69	84	80	86	79	78	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-180684-6	WC-WS-NORTH-COMP (1-5)	79
LCS 410-350542/2-A	Lab Control Sample	90
MB 410-350542/1-A	Method Blank	86

Surrogate Legend

OCDF = 13C-OCDF
 OCDD = 13C-OCDD
 TCDF = 13C-2,3,7,8-TCDF
 TCDD = 13C-2,3,7,8-TCDD
 PeCF = 13C-2,3,4,7,8-PeCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/1/2023 3:23:15 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180789-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/1/2023 3:23:15 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	10
Surrogate Summary	22
QC Sample Results	26
QC Association Summary	37
Lab Chronicle	42
Certification Summary	46
Chain of Custody	48
Receipt Checklists	52
Isotope Dilution Summary	53

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
⌘	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Job ID: 240-180789-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180789-1

Receipt

The samples were received on 2/23/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563460 was outside the method criteria for the following analytes: Chloromethane and Dichlorodifluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-563460 recovered above the upper control limit for 1,1,2-Trichloro-1,2,2-trifluoroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-V279404-PLASTIC PELLETS (240-180789-1), WC-VB1264-PLASTIC PELLETS (240-180789-2), WC-VB1184-PLASTIC PELLETS (240-180789-3), WC-VB1319-PLASTIC PELLETS (240-180789-4) and WC-VB280784-PLASTIC PELLETS (240-180789-5).

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-563232 and analytical batch 240-563460 recovered outside control limits for the following analyte: 1,2-Dibromo-3-Chloropropane. 1,2-Dibromo-3-Chloropropane have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-563434 and 240-563434 and analytical batch 240-563640.

Method 8260D: Internal standard (ISTD) response for the following samples was outside control limits: WC-V279404-PLASTIC PELLETS (240-180789-1), WC-VB1264-PLASTIC PELLETS (240-180789-2), WC-VB1184-PLASTIC PELLETS (240-180789-3), WC-VB1319-PLASTIC PELLETS (240-180789-4) and WC-VB280784-PLASTIC PELLETS (240-180789-5). The sample were re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260D: Surrogate recovery for the following samples was outside control limits: WC-V279404-PLASTIC PELLETS (240-180789-1), WC-VB1264-PLASTIC PELLETS (240-180789-2), WC-VB1184-PLASTIC PELLETS (240-180789-3), WC-VB1319-PLASTIC PELLETS (240-180789-4) and WC-VB280784-PLASTIC PELLETS (240-180789-5). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: (LCS 240-563290/2-A) and (MB 240-563290/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Job ID: 240-180789-1 (Continued)

Laboratory: Eurofins Canton (Continued)

PFAS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180789-1	WC-V279404-PLASTIC PELLETS	Solid	02/22/23 08:35	02/23/23 08:00
240-180789-2	WC-VB1264-PLASTIC PELLETS	Solid	02/22/23 09:00	02/23/23 08:00
240-180789-3	WC-VB1184-PLASTIC PELLETS	Solid	02/22/23 09:15	02/23/23 08:00
240-180789-4	WC-VB1319-PLASTIC PELLETS	Solid	02/22/23 09:50	02/23/23 08:00
240-180789-5	WC-VB280784-PLASTIC PELLETS	Solid	02/22/23 10:20	02/23/23 08:00
240-180789-6	WC-COMP1-PLASTIC PELLETS	Solid	02/22/23 00:00	02/23/23 08:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-V279404-PLASTIC PELLETS

Lab Sample ID: 240-180789-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0085	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.16	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Selenium	0.010	J	0.050	0.0060	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB1264-PLASTIC PELLETS

Lab Sample ID: 240-180789-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0081	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.024	J B	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB1184-PLASTIC PELLETS

Lab Sample ID: 240-180789-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.016	J B	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB1319-PLASTIC PELLETS

Lab Sample ID: 240-180789-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0061	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.0097	J B	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB280784-PLASTIC PELLETS

Lab Sample ID: 240-180789-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0062	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.035	J B	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-COMP1-PLASTIC PELLETS

Lab Sample ID: 240-180789-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.19	J	0.25	0.0012	mg/L	1		8260D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-V279404-PLASTIC PELLETS

Lab Sample ID: 240-180789-1

Date Collected: 02/22/23 08:35

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.62	0.19	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,1,2,2-Tetrachloroethane	ND		0.62	0.37	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.62	0.17	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,1,2-Trichloroethane	ND		0.62	0.14	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,1-Dichloroethane	ND		0.62	0.12	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,1-Dichloroethene	ND		0.62	0.20	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,2,4-Trichlorobenzene	ND		0.62	0.33	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,2-Dibromo-3-Chloropropane	ND	*-	1.2	0.55	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Ethylene Dibromide	ND		0.62	0.19	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,2-Dichlorobenzene	ND		0.62	0.30	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,2-Dichloroethane	ND		0.62	0.12	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,2-Dichloropropane	ND		0.62	0.091	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,3-Dichlorobenzene	ND		0.62	0.11	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
1,4-Dichlorobenzene	ND		0.62	0.14	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
2-Butanone (MEK)	ND		2.5	0.39	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
2-Hexanone	ND		2.5	0.65	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
4-Methyl-2-pentanone (MIBK)	ND		2.5	0.59	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Acetone	ND		2.5	0.60	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Benzene	ND		0.62	0.10	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Dichlorobromomethane	ND		0.62	0.15	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Bromoform	ND		0.62	0.56	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Bromomethane	ND		0.62	0.41	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Carbon disulfide	ND		0.62	0.27	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Carbon tetrachloride	ND		0.62	0.25	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Chlorobenzene	ND		0.62	0.086	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Chloroethane	ND		0.62	0.37	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Chloroform	ND		0.62	0.13	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Chloromethane	ND		0.62	0.16	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
cis-1,2-Dichloroethene	ND		0.62	0.099	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
cis-1,3-Dichloropropene	ND		0.62	0.31	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Cyclohexane	ND		1.2	0.40	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Chlorodibromomethane	ND		0.62	0.29	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Dichlorodifluoromethane	ND		0.62	0.13	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Ethylbenzene	ND		0.62	0.12	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Isopropylbenzene	ND		0.62	0.094	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Methyl acetate	ND		3.1	0.41	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Methyl tert-butyl ether	ND		0.62	0.091	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Methylcyclohexane	ND		1.2	0.16	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Methylene Chloride	ND		1.2	0.94	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Styrene	ND		0.62	0.13	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Tetrachloroethene	ND		0.62	0.24	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Toluene	ND		0.62	0.59	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
trans-1,2-Dichloroethene	ND		0.62	0.15	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
trans-1,3-Dichloropropene	ND		0.62	0.26	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Trichloroethene	ND		0.62	0.35	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Trichlorofluoromethane	ND		0.62	0.34	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1
Vinyl chloride	ND		0.013	0.0045	mg/Kg	✳	02/23/23 14:15	02/27/23 20:46	1
Xylenes, Total	ND		1.2	0.22	mg/Kg	✳	02/23/23 19:57	02/26/23 20:31	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-V279404-PLASTIC PELLETS

Lab Sample ID: 240-180789-1

Date Collected: 02/22/23 08:35

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/23/23 19:57	02/26/23 20:31	1
Toluene-d8 (Surr)	115		56 - 125	02/23/23 14:15	02/27/23 20:46	1
Dibromofluoromethane (Surr)	75		41 - 138	02/23/23 19:57	02/26/23 20:31	1
Dibromofluoromethane (Surr)	103		41 - 138	02/23/23 14:15	02/27/23 20:46	1
4-Bromofluorobenzene (Surr)	71		41 - 143	02/23/23 19:57	02/26/23 20:31	1
4-Bromofluorobenzene (Surr)	177	S1+ *3	41 - 143	02/23/23 14:15	02/27/23 20:46	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125	02/23/23 19:57	02/26/23 20:31	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125	02/23/23 14:15	02/27/23 20:46	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 16:51	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 16:51	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 16:51	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 16:51	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 16:51	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 16:51	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 16:51	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 16:51	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 16:51	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 16:51	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 16:51	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		46 - 137	02/28/23 07:22	02/28/23 16:51	1
Phenol-d5 (Surr)	57		26 - 120	02/28/23 07:22	02/28/23 16:51	1
Nitrobenzene-d5 (Surr)	71		24 - 120	02/28/23 07:22	02/28/23 16:51	1
2-Fluorophenol (Surr)	65		19 - 120	02/28/23 07:22	02/28/23 16:51	1
2-Fluorobiphenyl (Surr)	82		33 - 120	02/28/23 07:22	02/28/23 16:51	1
2,4,6-Tribromophenol (Surr)	62		10 - 120	02/28/23 07:22	02/28/23 16:51	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0085	J	0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 10:42	1
Barium	0.16	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 10:42	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 10:42	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 10:42	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 10:42	1
Selenium	0.010	J	0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 10:42	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 10:42	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.7		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.3		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1264-PLASTIC PELLETS

Lab Sample ID: 240-180789-2

Date Collected: 02/22/23 09:00

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.63	0.20	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,1,2,2-Tetrachloroethane	ND		0.63	0.38	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.63	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,1,2-Trichloroethane	ND		0.63	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,1-Dichloroethane	ND		0.63	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,1-Dichloroethene	ND		0.63	0.21	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,2,4-Trichlorobenzene	ND		0.63	0.33	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,2-Dibromo-3-Chloropropane	ND	*-	1.3	0.56	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Ethylene Dibromide	ND		0.63	0.20	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,2-Dichlorobenzene	ND		0.63	0.30	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,2-Dichloroethane	ND		0.63	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,2-Dichloropropane	ND		0.63	0.093	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,3-Dichlorobenzene	ND		0.63	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
1,4-Dichlorobenzene	ND		0.63	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
2-Butanone (MEK)	ND		2.5	0.39	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
2-Hexanone	ND		2.5	0.66	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
4-Methyl-2-pentanone (MIBK)	ND		2.5	0.60	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Acetone	ND		2.5	0.61	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Benzene	ND		0.63	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Dichlorobromomethane	ND		0.63	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Bromoform	ND		0.63	0.57	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Bromomethane	ND		0.63	0.42	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Carbon disulfide	ND		0.63	0.27	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Carbon tetrachloride	ND		0.63	0.26	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Chlorobenzene	ND		0.63	0.088	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Chloroethane	ND		0.63	0.38	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Chloroform	ND		0.63	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Chloromethane	ND		0.63	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
cis-1,2-Dichloroethene	ND		0.63	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
cis-1,3-Dichloropropene	ND		0.63	0.31	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Cyclohexane	ND		1.3	0.41	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Chlorodibromomethane	ND		0.63	0.29	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Dichlorodifluoromethane	ND		0.63	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Ethylbenzene	ND		0.63	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Isopropylbenzene	ND		0.63	0.095	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Methyl acetate	ND		3.1	0.42	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Methyl tert-butyl ether	ND		0.63	0.093	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Methylcyclohexane	ND		1.3	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Methylene Chloride	ND		1.3	0.96	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Styrene	ND		0.63	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Tetrachloroethene	ND		0.63	0.24	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Toluene	ND		0.63	0.60	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
trans-1,2-Dichloroethene	ND		0.63	0.16	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
trans-1,3-Dichloropropene	ND		0.63	0.26	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Trichloroethene	ND		0.63	0.36	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Trichlorofluoromethane	ND		0.63	0.34	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1
Vinyl chloride	ND		0.012	0.0044	mg/Kg	✱	02/23/23 12:10	02/27/23 21:34	1
Xylenes, Total	ND		1.3	0.23	mg/Kg	✱	02/23/23 19:57	02/26/23 20:52	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1264-PLASTIC PELLETS

Lab Sample ID: 240-180789-2

Date Collected: 02/22/23 09:00

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/23/23 19:57	02/26/23 20:52	1
Toluene-d8 (Surr)	125		56 - 125	02/23/23 12:10	02/27/23 21:34	1
Dibromofluoromethane (Surr)	81		41 - 138	02/23/23 19:57	02/26/23 20:52	1
Dibromofluoromethane (Surr)	104		41 - 138	02/23/23 12:10	02/27/23 21:34	1
4-Bromofluorobenzene (Surr)	71		41 - 143	02/23/23 19:57	02/26/23 20:52	1
4-Bromofluorobenzene (Surr)	182	S1+ *3	41 - 143	02/23/23 12:10	02/27/23 21:34	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125	02/23/23 19:57	02/26/23 20:52	1
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	02/23/23 12:10	02/27/23 21:34	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 15:20	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 15:20	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 15:20	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 15:20	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 15:20	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 15:20	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 15:20	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 15:20	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 15:20	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 15:20	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 15:20	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137	02/28/23 07:22	02/28/23 15:20	1
Phenol-d5 (Surr)	56		26 - 120	02/28/23 07:22	02/28/23 15:20	1
Nitrobenzene-d5 (Surr)	71		24 - 120	02/28/23 07:22	02/28/23 15:20	1
2-Fluorophenol (Surr)	64		19 - 120	02/28/23 07:22	02/28/23 15:20	1
2-Fluorobiphenyl (Surr)	79		33 - 120	02/28/23 07:22	02/28/23 15:20	1
2,4,6-Tribromophenol (Surr)	64		10 - 120	02/28/23 07:22	02/28/23 15:20	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0081	J	0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:03	1
Barium	0.024	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:03	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:03	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:03	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:03	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:03	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:03	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.7		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.3		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1184-PLASTIC PELLETS

Lab Sample ID: 240-180789-3

Date Collected: 02/22/23 09:15

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.66	0.21	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,1,2,2-Tetrachloroethane	ND		0.66	0.40	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.66	0.18	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,1,2-Trichloroethane	ND		0.66	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,1-Dichloroethane	ND		0.66	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,1-Dichloroethene	ND		0.66	0.22	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,2,4-Trichlorobenzene	ND		0.66	0.35	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,2-Dibromo-3-Chloropropane	ND	*	1.3	0.58	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Ethylene Dibromide	ND		0.66	0.21	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,2-Dichlorobenzene	ND		0.66	0.32	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,2-Dichloroethane	ND		0.66	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,2-Dichloropropane	ND		0.66	0.098	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,3-Dichlorobenzene	ND		0.66	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
1,4-Dichlorobenzene	ND		0.66	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
2-Butanone (MEK)	ND		2.6	0.41	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
2-Hexanone	ND		2.6	0.69	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
4-Methyl-2-pentanone (MIBK)	ND		2.6	0.63	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Acetone	ND		2.6	0.64	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Benzene	ND		0.66	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Dichlorobromomethane	ND		0.66	0.16	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Bromoform	ND		0.66	0.60	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Bromomethane	ND		0.66	0.44	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Carbon disulfide	ND		0.66	0.29	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Carbon tetrachloride	ND		0.66	0.27	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Chlorobenzene	ND		0.66	0.092	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Chloroethane	ND		0.66	0.40	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Chloroform	ND		0.66	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Chloromethane	ND		0.66	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
cis-1,2-Dichloroethene	ND		0.66	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
cis-1,3-Dichloropropene	ND		0.66	0.33	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Cyclohexane	ND		1.3	0.43	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Chlorodibromomethane	ND		0.66	0.31	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Dichlorodifluoromethane	ND		0.66	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Ethylbenzene	ND		0.66	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Isopropylbenzene	ND		0.66	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Methyl acetate	ND		3.3	0.44	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Methyl tert-butyl ether	ND		0.66	0.098	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Methylcyclohexane	ND		1.3	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Methylene Chloride	ND		1.3	1.0	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Styrene	ND		0.66	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Tetrachloroethene	ND		0.66	0.26	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Toluene	ND		0.66	0.63	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
trans-1,2-Dichloroethene	ND		0.66	0.16	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
trans-1,3-Dichloropropene	ND		0.66	0.28	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Trichloroethene	ND		0.66	0.38	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Trichlorofluoromethane	ND		0.66	0.36	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1
Vinyl chloride	ND		0.013	0.0045	mg/Kg	✱	02/23/23 12:10	02/27/23 22:23	1
Xylenes, Total	ND		1.3	0.24	mg/Kg	✱	02/23/23 19:57	02/26/23 21:13	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1184-PLASTIC PELLETS

Lab Sample ID: 240-180789-3

Date Collected: 02/22/23 09:15

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/23/23 19:57	02/26/23 21:13	1
Toluene-d8 (Surr)	114		56 - 125	02/23/23 12:10	02/27/23 22:23	1
Dibromofluoromethane (Surr)	76		41 - 138	02/23/23 19:57	02/26/23 21:13	1
Dibromofluoromethane (Surr)	99		41 - 138	02/23/23 12:10	02/27/23 22:23	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/23/23 19:57	02/26/23 21:13	1
4-Bromofluorobenzene (Surr)	172	S1+ *3	41 - 143	02/23/23 12:10	02/27/23 22:23	1
1,2-Dichloroethane-d4 (Surr)	74		58 - 125	02/23/23 19:57	02/26/23 21:13	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	02/23/23 12:10	02/27/23 22:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 15:42	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 15:42	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 15:42	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 15:42	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 15:42	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 15:42	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 15:42	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 15:42	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 15:42	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 15:42	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 15:42	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		46 - 137	02/28/23 07:22	02/28/23 15:42	1
Phenol-d5 (Surr)	56		26 - 120	02/28/23 07:22	02/28/23 15:42	1
Nitrobenzene-d5 (Surr)	71		24 - 120	02/28/23 07:22	02/28/23 15:42	1
2-Fluorophenol (Surr)	63		19 - 120	02/28/23 07:22	02/28/23 15:42	1
2-Fluorobiphenyl (Surr)	80		33 - 120	02/28/23 07:22	02/28/23 15:42	1
2,4,6-Tribromophenol (Surr)	63		10 - 120	02/28/23 07:22	02/28/23 15:42	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:07	1
Barium	0.016	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:07	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:07	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:07	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:07	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:07	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:07	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.8		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.2		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1319-PLASTIC PELLETS

Lab Sample ID: 240-180789-4

Date Collected: 02/22/23 09:50

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.69	0.21	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,1,2,2-Tetrachloroethane	ND		0.69	0.41	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.69	0.18	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,1,2-Trichloroethane	ND		0.69	0.16	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,1-Dichloroethane	ND		0.69	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,1-Dichloroethene	ND		0.69	0.22	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,2,4-Trichlorobenzene	ND		0.69	0.36	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,2-Dibromo-3-Chloropropane	ND	*-	1.4	0.61	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Ethylene Dibromide	ND		0.69	0.22	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,2-Dichlorobenzene	ND		0.69	0.33	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,2-Dichloroethane	ND		0.69	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,2-Dichloropropane	ND		0.69	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,3-Dichlorobenzene	ND		0.69	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
1,4-Dichlorobenzene	ND		0.69	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
2-Butanone (MEK)	ND		2.7	0.43	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
2-Hexanone	ND		2.7	0.72	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
4-Methyl-2-pentanone (MIBK)	ND		2.7	0.65	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Acetone	ND		2.7	0.67	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Benzene	ND		0.69	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Dichlorobromomethane	ND		0.69	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Bromoform	ND		0.69	0.62	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Bromomethane	ND		0.69	0.45	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Carbon disulfide	ND		0.69	0.30	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Carbon tetrachloride	ND		0.69	0.28	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Chlorobenzene	ND		0.69	0.096	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Chloroethane	ND		0.69	0.41	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Chloroform	ND		0.69	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Chloromethane	ND		0.69	0.18	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
cis-1,2-Dichloroethene	ND		0.69	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
cis-1,3-Dichloropropene	ND		0.69	0.34	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Cyclohexane	ND		1.4	0.45	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Chlorodibromomethane	ND		0.69	0.32	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Dichlorodifluoromethane	ND		0.69	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Ethylbenzene	ND		0.69	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Isopropylbenzene	ND		0.69	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Methyl acetate	ND		3.4	0.46	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Methyl tert-butyl ether	ND		0.69	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Methylcyclohexane	ND		1.4	0.18	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Methylene Chloride	ND		1.4	1.0	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Styrene	ND		0.69	0.14	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Tetrachloroethene	ND		0.69	0.27	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Toluene	ND		0.69	0.66	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
trans-1,2-Dichloroethene	ND		0.69	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
trans-1,3-Dichloropropene	ND		0.69	0.29	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Trichloroethene	ND		0.69	0.39	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Trichlorofluoromethane	ND		0.69	0.38	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1
Vinyl chloride	ND		0.014	0.0049	mg/Kg	✱	02/23/23 12:10	02/27/23 23:11	1
Xylenes, Total	ND		1.4	0.25	mg/Kg	✱	02/23/23 19:57	02/26/23 21:34	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1319-PLASTIC PELLETS

Lab Sample ID: 240-180789-4

Date Collected: 02/22/23 09:50

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	02/23/23 19:57	02/26/23 21:34	1
Toluene-d8 (Surr)	116		56 - 125	02/23/23 12:10	02/27/23 23:11	1
Dibromofluoromethane (Surr)	76		41 - 138	02/23/23 19:57	02/26/23 21:34	1
Dibromofluoromethane (Surr)	102		41 - 138	02/23/23 12:10	02/27/23 23:11	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/23/23 19:57	02/26/23 21:34	1
4-Bromofluorobenzene (Surr)	177	S1+ *3	41 - 143	02/23/23 12:10	02/27/23 23:11	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125	02/23/23 19:57	02/26/23 21:34	1
1,2-Dichloroethane-d4 (Surr)	86		58 - 125	02/23/23 12:10	02/27/23 23:11	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 16:05	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 16:05	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 16:05	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 16:05	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 16:05	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 16:05	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 16:05	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 16:05	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 16:05	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 16:05	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 16:05	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		46 - 137	02/28/23 07:22	02/28/23 16:05	1
Phenol-d5 (Surr)	55		26 - 120	02/28/23 07:22	02/28/23 16:05	1
Nitrobenzene-d5 (Surr)	69		24 - 120	02/28/23 07:22	02/28/23 16:05	1
2-Fluorophenol (Surr)	65		19 - 120	02/28/23 07:22	02/28/23 16:05	1
2-Fluorobiphenyl (Surr)	79		33 - 120	02/28/23 07:22	02/28/23 16:05	1
2,4,6-Tribromophenol (Surr)	63		10 - 120	02/28/23 07:22	02/28/23 16:05	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0061	J	0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:20	1
Barium	0.0097	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:20	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:20	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:20	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:20	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:20	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:20	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.9		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.1		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB280784-PLASTIC PELLETS

Lab Sample ID: 240-180789-5

Date Collected: 02/22/23 10:20

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.70	0.22	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,1,2,2-Tetrachloroethane	ND		0.70	0.42	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.70	0.19	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,1,2-Trichloroethane	ND		0.70	0.16	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,1-Dichloroethane	ND		0.70	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,1-Dichloroethene	ND		0.70	0.23	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,2,4-Trichlorobenzene	ND		0.70	0.37	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,2-Dibromo-3-Chloropropane	ND	*-	1.4	0.62	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Ethylene Dibromide	ND		0.70	0.22	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,2-Dichlorobenzene	ND		0.70	0.34	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,2-Dichloroethane	ND		0.70	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,2-Dichloropropane	ND		0.70	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,3-Dichlorobenzene	ND		0.70	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
1,4-Dichlorobenzene	ND		0.70	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
2-Butanone (MEK)	ND		2.8	0.44	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
2-Hexanone	ND		2.8	0.74	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
4-Methyl-2-pentanone (MIBK)	ND		2.8	0.67	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Acetone	ND		2.8	0.69	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Benzene	ND		0.70	0.12	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Dichlorobromomethane	ND		0.70	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Bromoform	ND		0.70	0.64	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Bromomethane	ND		0.70	0.47	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Carbon disulfide	ND		0.70	0.30	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Carbon tetrachloride	ND		0.70	0.29	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Chlorobenzene	ND		0.70	0.098	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Chloroethane	ND		0.70	0.42	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Chloroform	ND		0.70	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Chloromethane	ND		0.70	0.19	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
cis-1,2-Dichloroethene	ND		0.70	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
cis-1,3-Dichloropropene	ND		0.70	0.35	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Cyclohexane	ND		1.4	0.46	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Chlorodibromomethane	ND		0.70	0.33	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Dichlorodifluoromethane	ND		0.70	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Ethylbenzene	ND		0.70	0.13	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Isopropylbenzene	ND		0.70	0.11	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Methyl acetate	ND		3.5	0.47	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Methyl tert-butyl ether	ND		0.70	0.10	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Methylcyclohexane	ND		1.4	0.19	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Methylene Chloride	ND		1.4	1.1	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Styrene	ND		0.70	0.15	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Tetrachloroethene	ND		0.70	0.27	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Toluene	ND		0.70	0.67	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
trans-1,2-Dichloroethene	ND		0.70	0.17	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
trans-1,3-Dichloropropene	ND		0.70	0.30	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Trichloroethene	ND		0.70	0.40	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Trichlorofluoromethane	ND		0.70	0.39	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1
Vinyl chloride	ND		0.015	0.0052	mg/Kg	✱	02/23/23 12:10	02/27/23 23:59	1
Xylenes, Total	ND		1.4	0.26	mg/Kg	✱	02/23/23 19:57	02/26/23 21:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB280784-PLASTIC PELLETS

Lab Sample ID: 240-180789-5

Date Collected: 02/22/23 10:20

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	02/23/23 19:57	02/26/23 21:56	1
Toluene-d8 (Surr)	113		56 - 125	02/23/23 12:10	02/27/23 23:59	1
Dibromofluoromethane (Surr)	76		41 - 138	02/23/23 19:57	02/26/23 21:56	1
Dibromofluoromethane (Surr)	99		41 - 138	02/23/23 12:10	02/27/23 23:59	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/23/23 19:57	02/26/23 21:56	1
4-Bromofluorobenzene (Surr)	168	S1+ *3	41 - 143	02/23/23 12:10	02/27/23 23:59	1
1,2-Dichloroethane-d4 (Surr)	77		58 - 125	02/23/23 19:57	02/26/23 21:56	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	02/23/23 12:10	02/27/23 23:59	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 16:28	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 16:28	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 16:28	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 16:28	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 16:28	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 16:28	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 16:28	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 16:28	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 16:28	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 16:28	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 16:28	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137	02/28/23 07:22	02/28/23 16:28	1
Phenol-d5 (Surr)	53		26 - 120	02/28/23 07:22	02/28/23 16:28	1
Nitrobenzene-d5 (Surr)	71		24 - 120	02/28/23 07:22	02/28/23 16:28	1
2-Fluorophenol (Surr)	63		19 - 120	02/28/23 07:22	02/28/23 16:28	1
2-Fluorobiphenyl (Surr)	82		33 - 120	02/28/23 07:22	02/28/23 16:28	1
2,4,6-Tribromophenol (Surr)	62		10 - 120	02/28/23 07:22	02/28/23 16:28	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0062	J	0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:25	1
Barium	0.035	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:25	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:25	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:25	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:25	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:25	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.9		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.1		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-COMP1-PLASTIC PELLETS

Lab Sample ID: 240-180789-6

Date Collected: 02/22/23 00:00

Matrix: Solid

Date Received: 02/23/23 08:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/24/23 14:12	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/24/23 14:12	1
2-Butanone (MEK)	0.19	J	0.25	0.0012	mg/L			02/24/23 14:12	1
Benzene	ND		0.025	0.00042	mg/L			02/24/23 14:12	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/24/23 14:12	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/24/23 14:12	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/24/23 14:12	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/24/23 14:12	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/24/23 14:12	1
Chloroform	ND		0.025	0.00047	mg/L			02/24/23 14:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/24/23 14:12	1
Dibromofluoromethane (Surr)	106		71 - 121		02/24/23 14:12	1
4-Bromofluorobenzene (Surr)	83		80 - 120		02/24/23 14:12	1
1,2-Dichloroethane-d4 (Surr)	102		76 - 120		02/24/23 14:12	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/24/23 12:11	02/27/23 14:33	1
Endrin	ND		0.00050	0.0000065	mg/L		02/24/23 12:11	02/27/23 14:33	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/24/23 12:11	02/27/23 14:33	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/24/23 12:11	02/27/23 14:33	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/24/23 12:11	02/27/23 14:33	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/24/23 12:11	02/27/23 14:33	1
Toxaphene	ND		0.020	0.000058	mg/L		02/24/23 12:11	02/27/23 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	85		10 - 145	02/24/23 12:11	02/27/23 14:33	1
DCB Decachlorobiphenyl	89		10 - 145	02/24/23 12:11	02/27/23 14:33	1
Tetrachloro-m-xylene	74		10 - 123	02/24/23 12:11	02/27/23 14:33	1
Tetrachloro-m-xylene	87		10 - 123	02/24/23 12:11	02/27/23 14:33	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/27/23 20:33	02/28/23 07:00	1
2,4-D	ND		0.050	0.016	mg/L		02/27/23 20:33	02/28/23 07:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136	02/27/23 20:33	02/28/23 07:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.9		0.1	0.1	%			02/23/23 10:54	1
Percent Moisture (EPA Moisture)	0.1		0.1	0.1	%			02/23/23 10:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-COMP1-PLASTIC PELLETS

Lab Sample ID: 240-180789-6

Date Collected: 02/22/23 00:00

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		450	220	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1221	ND		450	270	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1232	ND		450	190	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1242	ND		450	170	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1248	ND		450	150	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1254	ND		450	190	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1260	ND		450	190	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1262	ND		450	200	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Aroclor-1268	ND		450	140	ug/Kg	✳	02/24/23 09:04	02/24/23 15:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	106		10 - 149				02/24/23 09:04	02/24/23 15:45	1
DCB Decachlorobiphenyl	106		10 - 174				02/24/23 09:04	02/24/23 15:45	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.60	0.20	ng/g	✳	02/24/23 17:50	02/28/23 12:26	1
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g	✳	02/24/23 17:50	02/28/23 12:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C8 PFOA	103		26 - 159				02/24/23 17:50	02/28/23 12:26	1
¹³ C8 PFOS	98		41 - 154				02/24/23 17:50	02/28/23 12:26	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180789-1	WC-V279404-PLASTIC PELLETS	78	75	71	76
240-180789-1	WC-V279404-PLASTIC PELLETS	115	103	177 S1+ *3	89
240-180789-2	WC-VB1264-PLASTIC PELLETS	78	81	71	76
240-180789-2	WC-VB1264-PLASTIC PELLETS	125	104	182 S1+ *3	90
240-180789-3	WC-VB1184-PLASTIC PELLETS	78	76	70	74
240-180789-3	WC-VB1184-PLASTIC PELLETS	114	99	172 S1+ *3	84
240-180789-4	WC-VB1319-PLASTIC PELLETS	79	76	70	75
240-180789-4	WC-VB1319-PLASTIC PELLETS	116	102	177 S1+ *3	86
240-180789-5	WC-VB280784-PLASTIC PELLETS	79	76	70	77
240-180789-5	WC-VB280784-PLASTIC PELLETS	113	99	168 S1+ *3	84
LCS 240-563232/2-A	Lab Control Sample	82	84	72	72
LCS 240-563640/4	Lab Control Sample	99	95	108	85
MB 240-563232/1-A	Method Blank	77	78	70	74
MB 240-563434/2-A	Method Blank	98	98	111	85

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-563300/10	Lab Control Sample	103	105	95	98

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180789-6	WC-COMP1-PLASTIC PELLETS	98	106	83	102
LB 240-563227/1-A MB	Method Blank	97	101	85	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation

Job ID: 240-180789-1

Project/Site: NS East Palestine

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-563667/8-A	Lab Control Sample	95	61	71	67	82	70
MB 240-563667/7-A	Method Blank	100	57	72	66	84	69

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180789-1	WC-V279404-PLASTIC PELLETS	92	57	71	65	82	62
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	93	62	74	68	80	61
240-180789-2	WC-VB1264-PLASTIC PELLETS	93	56	71	64	79	64
240-180789-3	WC-VB1184-PLASTIC PELLETS	92	56	71	63	80	63
240-180789-4	WC-VB1319-PLASTIC PELLETS	92	55	69	65	79	63
240-180789-5	WC-VB280784-PLASTIC PELLETS	93	53	71	63	82	62

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-563346/9-A	Lab Control Sample	85	86	60	72
MB 240-563346/8-A	Method Blank	85	87	70	85

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180789-6	WC-COMP1-PLASTIC PELLETS	85	89	74	87

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-180789-6	WC-COMP1-PLASTIC PELLETS	106	106
LCS 240-563290/2-A	Lab Control Sample	111	121
MB 240-563290/1-A	Method Blank	113	146

Surrogate Legend
 TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCPAA2 (26-136)
LCS 410-348421/3-A	Lab Control Sample	70
MB 410-348421/1-A	Method Blank	66
MB 410-348421/2-A	Method Blank	68

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCPAA2 (26-136)
240-180789-6	WC-COMP1-PLASTIC PELLETS	68
240-180789-6 MSD	WC-COMP1-PLASTIC PELLETS	71

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCPAA1 (26-136)
240-180789-6 MS	WC-COMP1-PLASTIC PELLETS	69

Surrogate Legend

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine
DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Job ID: 240-180789-1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-563232/1-A
Matrix: Solid
Analysis Batch: 563460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563232

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Acetone	ND		1.0	0.24	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Benzene	ND		0.25	0.042	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Bromoform	ND		0.25	0.23	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Chloroform	ND		0.25	0.054	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Styrene	ND		0.25	0.052	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Toluene	ND		0.25	0.24	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/23/23 19:57	02/26/23 19:48	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/23/23 19:57	02/26/23 19:48	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563232/1-A
Matrix: Solid
Analysis Batch: 563460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563232

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	77		56 - 125	02/23/23 19:57	02/26/23 19:48	1
Dibromofluoromethane (Surr)	78		41 - 138	02/23/23 19:57	02/26/23 19:48	1
4-Bromofluorobenzene (Surr)	70		41 - 143	02/23/23 19:57	02/26/23 19:48	1
1,2-Dichloroethane-d4 (Surr)	74		58 - 125	02/23/23 19:57	02/26/23 19:48	1

Lab Sample ID: LCS 240-563232/2-A
Matrix: Solid
Analysis Batch: 563460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563232

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	1.25	1.19		mg/Kg		95	74 - 136
1,1,1,2-Tetrachloroethane	1.25	0.948		mg/Kg		76	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.38		mg/Kg		110	64 - 148
1,1,2-Trichloroethane	1.25	1.08		mg/Kg		86	79 - 120
1,1-Dichloroethane	1.25	1.04		mg/Kg		83	74 - 121
1,1-Dichloroethene	1.25	1.19		mg/Kg		95	68 - 141
1,2,4-Trichlorobenzene	1.25	1.09		mg/Kg		87	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.641	*-	mg/Kg		51	52 - 133
Ethylene Dibromide	1.25	1.06		mg/Kg		85	80 - 121
1,2-Dichlorobenzene	1.25	1.11		mg/Kg		88	73 - 120
1,2-Dichloroethane	1.25	1.01		mg/Kg		81	71 - 123
1,2-Dichloropropane	1.25	0.988		mg/Kg		79	76 - 126
1,3-Dichlorobenzene	1.25	1.12		mg/Kg		89	73 - 120
1,4-Dichlorobenzene	1.25	1.08		mg/Kg		87	74 - 120
2-Butanone (MEK)	2.50	2.08		mg/Kg		83	63 - 142
2-Hexanone	2.50	1.72		mg/Kg		69	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	1.70		mg/Kg		68	62 - 142
Acetone	2.50	2.38		mg/Kg		95	58 - 160
Benzene	1.25	1.16		mg/Kg		93	76 - 121
Dichlorobromomethane	1.25	1.03		mg/Kg		82	71 - 138
Bromoform	1.25	0.910		mg/Kg		73	57 - 140
Bromomethane	1.25	0.757		mg/Kg		61	10 - 171
Carbon disulfide	1.25	0.985		mg/Kg		79	43 - 152
Carbon tetrachloride	1.25	1.18		mg/Kg		94	64 - 144
Chlorobenzene	1.25	1.10		mg/Kg		88	80 - 120
Chloroethane	1.25	1.06		mg/Kg		84	11 - 164
Chloroform	1.25	1.14		mg/Kg		91	78 - 120
Chloromethane	1.25	0.882		mg/Kg		71	41 - 142
cis-1,2-Dichloroethene	1.25	1.18		mg/Kg		94	78 - 124
cis-1,3-Dichloropropene	1.25	0.941		mg/Kg		75	70 - 133
Cyclohexane	1.25	1.06		mg/Kg		85	65 - 137
Chlorodibromomethane	1.25	0.913		mg/Kg		73	68 - 131
Dichlorodifluoromethane	1.25	0.953		mg/Kg		76	21 - 150
Ethylbenzene	1.25	1.14		mg/Kg		92	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		98	80 - 130
Methyl acetate	2.50	1.92		mg/Kg		77	60 - 133
Methyl tert-butyl ether	1.25	0.976		mg/Kg		78	70 - 130
Methylcyclohexane	1.25	1.24		mg/Kg		99	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563232/2-A
Matrix: Solid
Analysis Batch: 563460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563232

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	0.936		mg/Kg		75	71 - 124
Styrene	1.25	1.21		mg/Kg		97	75 - 140
Tetrachloroethene	1.25	1.21		mg/Kg		97	76 - 127
Toluene	1.25	1.12		mg/Kg		90	80 - 120
trans-1,2-Dichloroethene	1.25	1.20		mg/Kg		96	76 - 130
trans-1,3-Dichloropropene	1.25	0.834		mg/Kg		67	61 - 121
Trichloroethene	1.25	1.23		mg/Kg		99	74 - 130
Trichlorofluoromethane	1.25	1.20		mg/Kg		96	50 - 154
Vinyl chloride	1.25	1.13		mg/Kg		91	49 - 146
Xylenes, Total	2.50	2.41		mg/Kg		96	80 - 122
m-Xylene & p-Xylene	1.25	1.18		mg/Kg		95	80 - 122
o-Xylene	1.25	1.23		mg/Kg		98	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	82		56 - 125
Dibromofluoromethane (Surr)	84		41 - 138
4-Bromofluorobenzene (Surr)	72		41 - 143
1,2-Dichloroethane-d4 (Surr)	72		58 - 125

Lab Sample ID: LCS 240-563300/10
Matrix: Solid
Analysis Batch: 563300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.27		mg/L		127	74 - 127
1,2-Dichloroethane	1.00	1.08		mg/L		108	72 - 120
2-Butanone (MEK)	2.00	2.23		mg/L		111	68 - 130
Benzene	1.00	1.15		mg/L		115	80 - 121
Carbon tetrachloride	1.00	1.06		mg/L		106	69 - 120
Chlorobenzene	1.00	1.12		mg/L		112	80 - 120
Chloroform	1.00	1.16		mg/L		116	75 - 120
Tetrachloroethene	1.00	1.15		mg/L		115	74 - 120
Trichloroethene	1.00	1.05		mg/L		105	75 - 120
Vinyl chloride	1.00	1.00		mg/L		100	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	105		71 - 121
4-Bromofluorobenzene (Surr)	95		80 - 120
1,2-Dichloroethane-d4 (Surr)	98		76 - 120

Lab Sample ID: MB 240-563434/2-A
Matrix: Solid
Analysis Batch: 563640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		02/25/23 14:15	02/27/23 19:58	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563434/2-A
Matrix: Solid
Analysis Batch: 563640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563434

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	98		56 - 125	02/25/23 14:15	02/27/23 19:58	1
Dibromofluoromethane (Surr)	98		41 - 138	02/25/23 14:15	02/27/23 19:58	1
4-Bromofluorobenzene (Surr)	111		41 - 143	02/25/23 14:15	02/27/23 19:58	1
1,2-Dichloroethane-d4 (Surr)	85		58 - 125	02/25/23 14:15	02/27/23 19:58	1

Lab Sample ID: LCS 240-563640/4
Matrix: Solid
Analysis Batch: 563640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Vinyl chloride	0.0250	0.0255		mg/Kg		102	49 - 146

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		56 - 125
Dibromofluoromethane (Surr)	95		41 - 138
4-Bromofluorobenzene (Surr)	108		41 - 143
1,2-Dichloroethane-d4 (Surr)	85		58 - 125

Lab Sample ID: LB 240-563227/1-A MB
Matrix: Solid
Analysis Batch: 563300

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/24/23 13:25	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/24/23 13:25	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			02/24/23 13:25	1
Benzene	ND		0.025	0.00042	mg/L			02/24/23 13:25	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/24/23 13:25	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/24/23 13:25	1
Chloroform	ND		0.025	0.00047	mg/L			02/24/23 13:25	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/24/23 13:25	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/24/23 13:25	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/24/23 13:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	97		80 - 120		02/24/23 13:25	1
Dibromofluoromethane (Surr)	101		71 - 121		02/24/23 13:25	1
4-Bromofluorobenzene (Surr)	85		80 - 120		02/24/23 13:25	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		02/24/23 13:25	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563667/7-A
Matrix: Solid
Analysis Batch: 563705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563667

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:22	02/28/23 12:56	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563667/7-A
Matrix: Solid
Analysis Batch: 563705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563667

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:22	02/28/23 12:56	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:22	02/28/23 12:56	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:22	02/28/23 12:56	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:22	02/28/23 12:56	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:22	02/28/23 12:56	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:22	02/28/23 12:56	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:22	02/28/23 12:56	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:22	02/28/23 12:56	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:22	02/28/23 12:56	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:22	02/28/23 12:56	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:22	02/28/23 12:56	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	100		46 - 137	02/28/23 07:22	02/28/23 12:56	1
Phenol-d5 (Surr)	57		26 - 120	02/28/23 07:22	02/28/23 12:56	1
Nitrobenzene-d5 (Surr)	72		24 - 120	02/28/23 07:22	02/28/23 12:56	1
2-Fluorophenol (Surr)	66		19 - 120	02/28/23 07:22	02/28/23 12:56	1
2-Fluorobiphenyl (Surr)	84		33 - 120	02/28/23 07:22	02/28/23 12:56	1
2,4,6-Tribromophenol (Surr)	69		10 - 120	02/28/23 07:22	02/28/23 12:56	1

Lab Sample ID: LCS 240-563667/8-A
Matrix: Solid
Analysis Batch: 563705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4,5-Trichlorophenol	0.0800	0.0592		mg/L		74	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0592		mg/L		74	51 - 120
2,4-Dinitrotoluene	0.0800	0.0628		mg/L		79	58 - 125
Hexachlorobenzene	0.0800	0.0632		mg/L		79	55 - 120
Hexachlorobutadiene	0.0800	0.0536		mg/L		67	41 - 120
Hexachloroethane	0.0800	0.0550		mg/L		69	39 - 120
2-Methylphenol	0.0800	0.0689		mg/L		86	45 - 120
3 & 4 Methylphenol	0.0800	0.0602		mg/L		75	40 - 120
Nitrobenzene	0.0800	0.0596		mg/L		74	47 - 120
Pentachlorophenol	0.160	0.0946		mg/L		59	19 - 132
Pyridine	0.160	0.0545		mg/L		34	10 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	95		46 - 137
Phenol-d5 (Surr)	61		26 - 120
Nitrobenzene-d5 (Surr)	71		24 - 120
2-Fluorophenol (Surr)	67		19 - 120
2-Fluorobiphenyl (Surr)	82		33 - 120
2,4,6-Tribromophenol (Surr)	70		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-180789-1 MS
Matrix: Solid
Analysis Batch: 563705

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563667

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
1,4-Dichlorobenzene	ND		0.0800	0.0543		mg/L		68	37 - 120
2,4,5-Trichlorophenol	ND		0.0800	0.0590		mg/L		74	25 - 128
2,4,6-Trichlorophenol	ND		0.0800	0.0563		mg/L		70	23 - 122
2,4-Dinitrotoluene	ND		0.0800	0.0606		mg/L		76	27 - 127
Hexachlorobenzene	ND		0.0800	0.0617		mg/L		77	18 - 123
Hexachlorobutadiene	ND		0.0800	0.0530		mg/L		66	10 - 120
Hexachloroethane	ND		0.0800	0.0509		mg/L		64	10 - 120
2-Methylphenol	ND		0.0800	0.0692		mg/L		87	22 - 120
3 & 4 Methylphenol	ND		0.0800	0.0574		mg/L		72	16 - 123
Nitrobenzene	ND		0.0800	0.0610		mg/L		76	26 - 120
Pentachlorophenol	ND		0.160	0.0751		mg/L		47	10 - 132
Pyridine	ND		0.160	0.0713		mg/L		45	10 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	93		46 - 137
Phenol-d5 (Surr)	62		26 - 120
Nitrobenzene-d5 (Surr)	74		24 - 120
2-Fluorophenol (Surr)	68		19 - 120
2-Fluorobiphenyl (Surr)	80		33 - 120
2,4,6-Tribromophenol (Surr)	61		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-563346/8-A
Matrix: Solid
Analysis Batch: 563575

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563346

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/24/23 12:11	02/27/23 14:01	1
Endrin	ND		0.00050	0.0000065	mg/L		02/24/23 12:11	02/27/23 14:01	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/24/23 12:11	02/27/23 14:01	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/24/23 12:11	02/27/23 14:01	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/24/23 12:11	02/27/23 14:01	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/24/23 12:11	02/27/23 14:01	1
Toxaphene	ND		0.020	0.0000058	mg/L		02/24/23 12:11	02/27/23 14:01	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	85		10 - 145	02/24/23 12:11	02/27/23 14:01	1
DCB Decachlorobiphenyl	87		10 - 145	02/24/23 12:11	02/27/23 14:01	1
Tetrachloro-m-xylene	70		10 - 123	02/24/23 12:11	02/27/23 14:01	1
Tetrachloro-m-xylene	85		10 - 123	02/24/23 12:11	02/27/23 14:01	1

Lab Sample ID: LCS 240-563346/9-A
Matrix: Solid
Analysis Batch: 563575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563346

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				
Endrin	0.00100	0.000900		mg/L		90	36 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-563346/9-A
Matrix: Solid
Analysis Batch: 563575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563346

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	0.00100	0.000759		mg/L		76	29 - 120
Heptachlor epoxide	0.00100	0.000828		mg/L		83	36 - 120
gamma-BHC (Lindane)	0.00100	0.000771		mg/L		77	23 - 120
Methoxychlor	0.00100	0.00111		mg/L		111	23 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	85		10 - 145
DCB Decachlorobiphenyl	86		10 - 145
Tetrachloro-m-xylene	60		10 - 123
Tetrachloro-m-xylene	72		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-563290/1-A
Matrix: Solid
Analysis Batch: 563246

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		50	25	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1221	ND		50	30	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1232	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1242	ND		50	19	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1248	ND		50	17	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1254	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1260	ND		50	21	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1262	ND		50	22	ug/Kg		02/24/23 09:04	02/24/23 17:11	1
Aroclor-1268	ND		50	16	ug/Kg		02/24/23 09:04	02/24/23 17:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	113		10 - 149	02/24/23 09:04	02/24/23 17:11	1
DCB Decachlorobiphenyl	146		10 - 174	02/24/23 09:04	02/24/23 17:11	1

Lab Sample ID: LCS 240-563290/2-A
Matrix: Solid
Analysis Batch: 563246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	928		ug/Kg		93	28 - 140
Aroclor-1260	1000	1010		ug/Kg		101	39 - 153

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	111		10 - 149
DCB Decachlorobiphenyl	121		10 - 174

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-348421/1-A
Matrix: Solid
Analysis Batch: 348438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348421

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/27/23 20:33	02/28/23 04:40	1
2,4-D	ND		0.050	0.016	mg/L		02/27/23 20:33	02/28/23 04:40	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136			02/27/23 20:33	02/28/23 04:40	1	

Lab Sample ID: MB 410-348421/2-A
Matrix: Solid
Analysis Batch: 348438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348421

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		02/27/23 20:33	02/28/23 05:08	1
2,4-D	ND		0.050	0.016	mg/L		02/27/23 20:33	02/28/23 05:08	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136			02/27/23 20:33	02/28/23 05:08	1	

Lab Sample ID: LCS 410-348421/3-A
Matrix: Solid
Analysis Batch: 348438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348421

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Silvex (2,4,5-TP)	0.00500	0.00412	J	mg/L		82	58 - 148	
2,4-D	0.0502	0.0401	J	mg/L		80	42 - 147	
		LCS	LCS			%Rec		
Surrogate	%Recovery	Qualifier	Limits			%Rec		
2,4-Dichlorophenylacetic acid (Surr)	70		26 - 136					

Lab Sample ID: 240-180789-6 MS
Matrix: Solid
Analysis Batch: 348438

Client Sample ID: WC-COMP1-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 348421

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier								
Silvex (2,4,5-TP)	ND		0.00500	0.00393	J	mg/L		79	58 - 148	
2,4-D	ND		0.0502	0.0403	J	mg/L		80	42 - 147	
		MS	MS			%Rec				
Surrogate	%Recovery	Qualifier	Limits			%Rec				
2,4-Dichlorophenylacetic acid (Surr)	69		26 - 136							

Lab Sample ID: 240-180789-6 MSD
Matrix: Solid
Analysis Batch: 348438

Client Sample ID: WC-COMP1-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 348421

Analyte	Sample	Sample	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
	Result	Qualifier									RPD	Limit
Silvex (2,4,5-TP)	ND		0.00500	0.00416	J	mg/L		83	58 - 148	6	30	
2,4-D	ND		0.0502	0.0407	J	mg/L		81	42 - 147	1	30	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 8151A - Herbicides (GC) (Continued)

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr)	71		26 - 136

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-347893/1-B
Matrix: Solid
Analysis Batch: 348677

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/24/23 17:50	02/28/23 11:53	1
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/24/23 17:50	02/28/23 11:53	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	98		26 - 159				02/24/23 17:50	02/28/23 11:53	1
13C8 PFOS	95		41 - 154				02/24/23 17:50	02/28/23 11:53	1

Lab Sample ID: LCS 410-347893/2-B
Matrix: Solid
Analysis Batch: 348677

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid	25.0	21.7		ng/g		87	59 - 131
Perfluorooctanesulfonic acid	23.1	21.9		ng/g		95	61 - 126
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits				
13C8 PFOA	89		26 - 159				
13C8 PFOS	88		41 - 154				

Lab Sample ID: LCSD 410-347893/3-B
Matrix: Solid
Analysis Batch: 348677

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347893

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorooctanoic acid	25.0	21.5		ng/g		86	59 - 131	1	30
Perfluorooctanesulfonic acid	23.1	21.3		ng/g		92	61 - 126	3	30
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits						
13C8 PFOA	91		26 - 159						
13C8 PFOS	91		41 - 154						

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-563342/2-A
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 10:33	1
Barium	ND		0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 10:33	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 10:33	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 10:33	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 10:33	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 240-563342/2-A
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 10:33	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 10:33	1

Lab Sample ID: LCS 240-563342/3-A
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.04		mg/L		102	50 - 150
Barium	2.00	1.88		mg/L		94	50 - 150
Cadmium	1.00	0.960		mg/L		96	50 - 150
Chromium	1.00	0.964		mg/L		96	50 - 150
Lead	1.00	0.914		mg/L		91	50 - 150
Selenium	2.00	2.07		mg/L		104	50 - 150
Silver	0.100	0.101		mg/L		101	50 - 150

Lab Sample ID: LB 240-563225/1-B
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563342

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 10:17	1
Barium	0.00300	J	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 10:17	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 10:17	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 10:17	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 10:17	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 10:17	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 10:17	1

Lab Sample ID: 240-180789-1 MS
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563342

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0085	J	5.00	4.90		mg/L		98	75 - 125
Barium	0.16	J B	50.0	47.4		mg/L		94	75 - 125
Cadmium	ND		1.00	0.962		mg/L		96	75 - 125
Chromium	ND		5.00	4.83		mg/L		97	75 - 125
Lead	ND		5.00	4.71		mg/L		94	75 - 125
Selenium	0.010	J	1.00	1.02		mg/L		100	75 - 125
Silver	ND		1.00	0.952		mg/L		95	75 - 125

Lab Sample ID: 240-180789-1 MSD
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563342

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0085	J	5.00	4.88		mg/L		97	75 - 125	0	20
Barium	0.16	J B	50.0	47.2		mg/L		94	75 - 125	0	20
Cadmium	ND		1.00	0.957		mg/L		96	75 - 125	1	20

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-180789-1 MSD
Matrix: Solid
Analysis Batch: 563567

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563342

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits	Limit	
Chromium	ND		5.00	4.85		mg/L		97	75 - 125	1	20
Lead	ND		5.00	4.68		mg/L		94	75 - 125	1	20
Selenium	0.010	J	1.00	0.974		mg/L		96	75 - 125	4	20
Silver	ND		1.00	0.883		mg/L		88	75 - 125	7	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-563343/2-A
Matrix: Solid
Analysis Batch: 563612

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563343

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier		Result					
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:38	1

Lab Sample ID: LCS 240-563343/3-A
Matrix: Solid
Analysis Batch: 563612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563343

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
Mercury	0.00500	0.00530		mg/L		106	80 - 120

Lab Sample ID: LB 240-563225/1-C
Matrix: Solid
Analysis Batch: 563612

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563343

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier		Result					
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:32	1

Lab Sample ID: 240-180789-1 MS
Matrix: Solid
Analysis Batch: 563612

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563343

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				Limits
Mercury	ND		0.00500	0.00542		mg/L		108	80 - 120

Lab Sample ID: 240-180789-1 MSD
Matrix: Solid
Analysis Batch: 563612

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 563343

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier				Limits	Limit	
Mercury	ND		0.00500	0.00540		mg/L		108	80 - 120	0	20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180789-1 DU
Matrix: Solid
Analysis Batch: 563185

Client Sample ID: WC-V279404-PLASTIC PELLETS
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier		Result				Qualifier
Percent Solids	99.7		99.7		%		0	20
Percent Moisture	0.3		0.3		%		15	20

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

GC/MS VOA

Composite Batch: 563207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	Composite	

Leach Batch: 563227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	1311	563207
LB 240-563227/1-A MB	Method Blank	TCLP	Solid	1311	

Prep Batch: 563232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-2	WC-VB1264-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-3	WC-VB1184-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-4	WC-VB1319-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-5	WC-VB280784-PLASTIC PELLETS	Total/NA	Solid	5035	
MB 240-563232/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-563232/2-A	Lab Control Sample	Total/NA	Solid	5035	

Analysis Batch: 563300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8260D	563227
LB 240-563227/1-A MB	Method Blank	TCLP	Solid	8260D	563227
LCS 240-563300/10	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 563434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-2	WC-VB1264-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-3	WC-VB1184-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-4	WC-VB1319-PLASTIC PELLETS	Total/NA	Solid	5035	
240-180789-5	WC-VB280784-PLASTIC PELLETS	Total/NA	Solid	5035	
MB 240-563434/2-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 563460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	8260D	563232
240-180789-2	WC-VB1264-PLASTIC PELLETS	Total/NA	Solid	8260D	563232
240-180789-3	WC-VB1184-PLASTIC PELLETS	Total/NA	Solid	8260D	563232
240-180789-4	WC-VB1319-PLASTIC PELLETS	Total/NA	Solid	8260D	563232
240-180789-5	WC-VB280784-PLASTIC PELLETS	Total/NA	Solid	8260D	563232
MB 240-563232/1-A	Method Blank	Total/NA	Solid	8260D	563232
LCS 240-563232/2-A	Lab Control Sample	Total/NA	Solid	8260D	563232

Analysis Batch: 563640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	8260D	563434
240-180789-2	WC-VB1264-PLASTIC PELLETS	Total/NA	Solid	8260D	563434
240-180789-3	WC-VB1184-PLASTIC PELLETS	Total/NA	Solid	8260D	563434
240-180789-4	WC-VB1319-PLASTIC PELLETS	Total/NA	Solid	8260D	563434
240-180789-5	WC-VB280784-PLASTIC PELLETS	Total/NA	Solid	8260D	563434
MB 240-563434/2-A	Method Blank	Total/NA	Solid	8260D	563434
LCS 240-563640/4	Lab Control Sample	Total/NA	Solid	8260D	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

GC/MS Semi VOA

Leach Batch: 563430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	1311	

Prep Batch: 563667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	3510C	563430
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	3510C	563430
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	3510C	563430
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	3510C	563430
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	3510C	563430
MB 240-563667/7-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563667/8-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	3510C	563430

Analysis Batch: 563705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	8270E	563667
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	8270E	563667
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	8270E	563667
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	8270E	563667
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	8270E	563667
MB 240-563667/7-A	Method Blank	Total/NA	Solid	8270E	563667
LCS 240-563667/8-A	Lab Control Sample	Total/NA	Solid	8270E	563667
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	8270E	563667

GC Semi VOA

Leach Batch: 348181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-6 MS	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-6 MSD	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	1311	

Prep Batch: 348421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348181
MB 410-348421/1-A	Method Blank	Total/NA	Solid	8151A	
MB 410-348421/2-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-348421/3-A	Lab Control Sample	Total/NA	Solid	8151A	
240-180789-6 MS	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348181
240-180789-6 MSD	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348181

Analysis Batch: 348438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348421
MB 410-348421/1-A	Method Blank	Total/NA	Solid	8151A	348421
MB 410-348421/2-A	Method Blank	Total/NA	Solid	8151A	348421

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

GC Semi VOA (Continued)

Analysis Batch: 348438 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-348421/3-A	Lab Control Sample	Total/NA	Solid	8151A	348421
240-180789-6 MS	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348421
240-180789-6 MSD	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8151A	348421

Composite Batch: 563207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	Composite	

Composite Batch: 563208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	Composite	

Leach Batch: 563222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	1311	563207

Analysis Batch: 563246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	8082A	563290
MB 240-563290/1-A	Method Blank	Total/NA	Solid	8082A	563290
LCS 240-563290/2-A	Lab Control Sample	Total/NA	Solid	8082A	563290

Prep Batch: 563290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	3546	563208
MB 240-563290/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-563290/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 563346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	3510C	563222
MB 240-563346/8-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563346/9-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 563575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	TCLP	Solid	8081B	563346
MB 240-563346/8-A	Method Blank	Total/NA	Solid	8081B	563346
LCS 240-563346/9-A	Lab Control Sample	Total/NA	Solid	8081B	563346

LCMS

Prep Batch: 347893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	537 (mod)	
MB 410-347893/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-347893/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	
LCSD 410-347893/3-B	Lab Control Sample Dup	Total/NA	Solid	537 (mod)	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

LCMS

Cleanup Batch: 347898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	Extract Aliquot	347898
MB 410-347893/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	347898
LCS 410-347893/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	347898
LCSD 410-347893/3-B	Lab Control Sample Dup	Total/NA	Solid	Extract Aliquot	347898

Analysis Batch: 348677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	537 IDA	347898
MB 410-347893/1-B	Method Blank	Total/NA	Solid	537 IDA	347898
LCS 410-347893/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	347898
LCSD 410-347893/3-B	Lab Control Sample Dup	Total/NA	Solid	537 IDA	347898

Metals

Leach Batch: 563225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	1311	
LB 240-563225/1-B	Method Blank	TCLP	Solid	1311	
LB 240-563225/1-C	Method Blank	TCLP	Solid	1311	
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	1311	
240-180789-1 MSD	WC-V279404-PLASTIC PELLETS	TCLP	Solid	1311	

Prep Batch: 563342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	3010A	563225
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	3010A	563225
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	3010A	563225
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	3010A	563225
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	3010A	563225
LB 240-563225/1-B	Method Blank	TCLP	Solid	3010A	563225
MB 240-563342/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563342/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	3010A	563225
240-180789-1 MSD	WC-V279404-PLASTIC PELLETS	TCLP	Solid	3010A	563225

Prep Batch: 563343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563225
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	7470A	563225
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	7470A	563225
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	7470A	563225
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	7470A	563225
LB 240-563225/1-C	Method Blank	TCLP	Solid	7470A	563225
MB 240-563343/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-563343/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563225
240-180789-1 MSD	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563225

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Metals

Analysis Batch: 563567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	6010D	563342
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	6010D	563342
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	6010D	563342
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	6010D	563342
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	6010D	563342
LB 240-563225/1-B	Method Blank	TCLP	Solid	6010D	563342
MB 240-563342/2-A	Method Blank	Total/NA	Solid	6010D	563342
LCS 240-563342/3-A	Lab Control Sample	Total/NA	Solid	6010D	563342
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	6010D	563342
240-180789-1 MSD	WC-V279404-PLASTIC PELLETS	TCLP	Solid	6010D	563342

Analysis Batch: 563612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563343
240-180789-2	WC-VB1264-PLASTIC PELLETS	TCLP	Solid	7470A	563343
240-180789-3	WC-VB1184-PLASTIC PELLETS	TCLP	Solid	7470A	563343
240-180789-4	WC-VB1319-PLASTIC PELLETS	TCLP	Solid	7470A	563343
240-180789-5	WC-VB280784-PLASTIC PELLETS	TCLP	Solid	7470A	563343
LB 240-563225/1-C	Method Blank	TCLP	Solid	7470A	563343
MB 240-563343/2-A	Method Blank	Total/NA	Solid	7470A	563343
LCS 240-563343/3-A	Lab Control Sample	Total/NA	Solid	7470A	563343
240-180789-1 MS	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563343
240-180789-1 MSD	WC-V279404-PLASTIC PELLETS	TCLP	Solid	7470A	563343

General Chemistry

Analysis Batch: 563185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-1	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-180789-2	WC-VB1264-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-180789-3	WC-VB1184-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-180789-4	WC-VB1319-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-180789-5	WC-VB280784-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	Moisture	563208
240-180789-1 DU	WC-V279404-PLASTIC PELLETS	Total/NA	Solid	Moisture	

Composite Batch: 563208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180789-6	WC-COMP1-PLASTIC PELLETS	Total/NA	Solid	Composite	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-V279404-PLASTIC PELLETS

Lab Sample ID: 240-180789-1

Date Collected: 02/22/23 08:35

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563430	DRJ	EET CAN	02/25/23 15:15 - 02/26/23 07:55 ¹
TCLP	Prep	3510C			563667	SDE	EET CAN	02/28/23 07:22
TCLP	Analysis	8270E		1	563705	MRU	EET CAN	02/28/23 16:51
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 10:42
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:43
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-V279404-PLASTIC PELLETS

Lab Sample ID: 240-180789-1

Date Collected: 02/22/23 08:35

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/23/23 14:15
Total/NA	Analysis	8260D		1	563640	CS	EET CAN	02/27/23 20:46
Total/NA	Prep	5035			563232	LAM	EET CAN	02/23/23 19:57
Total/NA	Analysis	8260D		1	563460	CS	EET CAN	02/26/23 20:31

Client Sample ID: WC-VB1264-PLASTIC PELLETS

Lab Sample ID: 240-180789-2

Date Collected: 02/22/23 09:00

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563430	DRJ	EET CAN	02/25/23 15:15 - 02/26/23 07:55 ¹
TCLP	Prep	3510C			563667	SDE	EET CAN	02/28/23 07:22
TCLP	Analysis	8270E		1	563705	MRU	EET CAN	02/28/23 15:20
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:03
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:50
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-VB1264-PLASTIC PELLETS

Lab Sample ID: 240-180789-2

Date Collected: 02/22/23 09:00

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/23/23 12:10
Total/NA	Analysis	8260D		1	563640	CS	EET CAN	02/27/23 21:34
Total/NA	Prep	5035			563232	LAM	EET CAN	02/23/23 19:57
Total/NA	Analysis	8260D		1	563460	CS	EET CAN	02/26/23 20:52

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB1184-PLASTIC PELLETS

Lab Sample ID: 240-180789-3

Date Collected: 02/22/23 09:15

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563430	DRJ	EET CAN	02/25/23 15:15 - 02/26/23 07:55 ¹
TCLP	Prep	3510C			563667	SDE	EET CAN	02/28/23 07:22
TCLP	Analysis	8270E		1	563705	MRU	EET CAN	02/28/23 15:42
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:07
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:52
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-VB1184-PLASTIC PELLETS

Lab Sample ID: 240-180789-3

Date Collected: 02/22/23 09:15

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/23/23 12:10
Total/NA	Analysis	8260D		1	563640	CS	EET CAN	02/27/23 22:23
Total/NA	Prep	5035			563232	LAM	EET CAN	02/23/23 19:57
Total/NA	Analysis	8260D		1	563460	CS	EET CAN	02/26/23 21:13

Client Sample ID: WC-VB1319-PLASTIC PELLETS

Lab Sample ID: 240-180789-4

Date Collected: 02/22/23 09:50

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563430	DRJ	EET CAN	02/25/23 15:15 - 02/26/23 07:55 ¹
TCLP	Prep	3510C			563667	SDE	EET CAN	02/28/23 07:22
TCLP	Analysis	8270E		1	563705	MRU	EET CAN	02/28/23 16:05
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:20
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:54
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-VB1319-PLASTIC PELLETS

Lab Sample ID: 240-180789-4

Date Collected: 02/22/23 09:50

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/23/23 12:10
Total/NA	Analysis	8260D		1	563640	CS	EET CAN	02/27/23 23:11
Total/NA	Prep	5035			563232	LAM	EET CAN	02/23/23 19:57
Total/NA	Analysis	8260D		1	563460	CS	EET CAN	02/26/23 21:34

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-VB280784-PLASTIC PELLETS

Lab Sample ID: 240-180789-5

Date Collected: 02/22/23 10:20

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563430	DRJ	EET CAN	02/25/23 15:15 - 02/26/23 07:55 ¹
TCLP	Prep	3510C			563667	SDE	EET CAN	02/28/23 07:22
TCLP	Analysis	8270E		1	563705	MRU	EET CAN	02/28/23 16:28
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:25
TCLP	Leach	1311			563225	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:56
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54

Client Sample ID: WC-VB280784-PLASTIC PELLETS

Lab Sample ID: 240-180789-5

Date Collected: 02/22/23 10:20

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563434	LAM	EET CAN	02/23/23 12:10
Total/NA	Analysis	8260D		1	563640	CS	EET CAN	02/27/23 23:59
Total/NA	Prep	5035			563232	LAM	EET CAN	02/23/23 19:57
Total/NA	Analysis	8260D		1	563460	CS	EET CAN	02/26/23 21:56

Client Sample ID: WC-COMP1-PLASTIC PELLETS

Lab Sample ID: 240-180789-6

Date Collected: 02/22/23 00:00

Matrix: Solid

Date Received: 02/23/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563207	DRJ	EET CAN	02/23/23 13:00
TCLP	Leach	1311			563227	DRJ	EET CAN	02/23/23 15:55 - 02/24/23 08:00 ¹
TCLP	Analysis	8260D		1	563300	TJL1	EET CAN	02/24/23 14:12
TCLP	Composite	Composite			563207	DRJ	EET CAN	02/23/23 13:00
TCLP	Leach	1311			563222	DRJ	EET CAN	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	3510C			563346	SDE	EET CAN	02/24/23 12:11
TCLP	Analysis	8081B		1	563575	BPM	EET CAN	02/27/23 14:33
TCLP	Leach	1311			348181	UNWS	ELLE	02/23/23 15:40 - 02/24/23 07:55 ¹
TCLP	Prep	8151A			348421	UKL2	ELLE	02/27/23 20:33
TCLP	Analysis	8151A		1	348438	UAMZ	ELLE	02/28/23 07:00
Total/NA	Analysis	Moisture		1	563185	MS	EET CAN	02/23/23 10:54
Total/NA	Composite	Composite			563208	DRJ	EET CAN	02/23/23 13:24

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Client Sample ID: WC-COMP1-PLASTIC PELLETS

Lab Sample ID: 240-180789-6

Date Collected: 02/22/23 00:00

Matrix: Solid

Date Received: 02/23/23 08:00

Percent Solids: 99.9

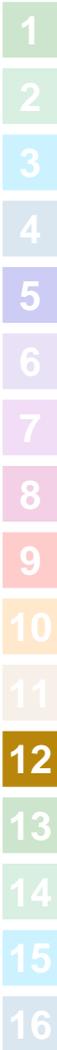
<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Composite	Composite			563208	DRJ	EET CAN	02/23/23 13:24
Total/NA	Prep	3546			563290	AJ	EET CAN	02/24/23 09:04
Total/NA	Analysis	8082A		1	563246	LSH	EET CAN	02/24/23 15:45
Total/NA	Prep	537 (mod)			347893	K9VR	ELLE	02/24/23 17:50
Total/NA	Cleanup	Extract Aliquot			347898	K9VR	ELLE	02/24/23 18:21
Total/NA	Analysis	537 IDA		1	348677	I5JH	ELLE	02/28/23 12:26

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180789-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-27-23 *
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

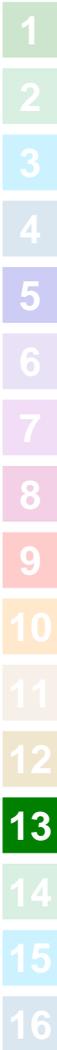
Job ID: 240-180789-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

Client Information Client Contact: Grace Gegick Company: ARCADIS U.S., Inc. Address: 284 Cramer Creek Court City: Dublin State, Zip: OH, 43017 Phone: Email: Grace.Gegick@arcadis.com Project Name: Ms. E. Rayshne OH Site:		Lab PM: DelMonico, Michael E-Mail: Michael.DelMonico@et.eurofins.com PWSID:		Sampler: Michelle Clayton Phone: Exemption 6 - PII		Carrier Tracking No(s): State of Origin:		COC No: 240-104750-37545.9 Page: Page 8 of 11 Job #: 1051			
Due Date Requested: TAT Requested (days): RUSH Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: Purchase Order not required WO #:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>		Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>		Total Number of Containers		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify) Other:			
Sample Identification WC-V279404 - Plastic Pellets WC-VB1264 - Plastic Pellets WC-VB1184 - Plastic Pellets WC-VB1319 - Plastic Pellets WC-VB280784 - Plastic Pellets WC-COMP1 - Plastic Pellets		Sample Date 2/22/23 2/22/23 2/22/23 2/22/23 2/22/23 2/22/23		Sample Time 635 900 915 950 1020 -		Sample Type (C=comp, G=grab) G G G G G C		Matrix (W=water, S=solid, O=soil, W=oil) Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid		Special Instructions/Note: TO BE COMPOSITED BY LAB	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:		Method of Shipment:			
Empty Kit Relinquished by: Michelle Clayton Date: 2/22/23		Relinquished by:		Relinquished by:		Relinquished by:		Date/Time: 2/23/22 8:00 Date/Time: Date/Time:			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Received by: M. A. A. Date/Time: 2/23/22 8:00 Company: EEC		Received by: Date/Time: Company:			



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client ARCADIS Site Name _____

Cooler unpacked by:

Cooler Received on 2/23/22 Opened on 2/23/22

M. A. J.

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Cooler Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # FC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
- IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 1.6 °C Corrected Cooler Temp. 1.4 °C
- IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
- IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
- Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
- Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
- Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
14. Were VOAs on the COC? Yes No NA
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: 2/23/22 @ 12:10

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180789-1

Login Number: 180789

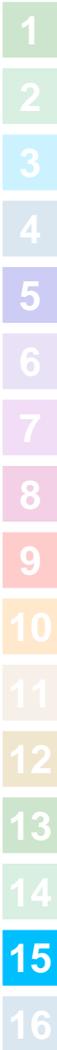
List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/24/23 10:52 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (<=/6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (<=/6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180789-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C8PFOA	C8PFOS
		(26-159)	(41-154)
240-180789-6	WC-COMP1-PLASTIC PELLETS	103	98
LCS 410-347893/2-B	Lab Control Sample	89	88
LCSD 410-347893/3-B	Lab Control Sample Dup	91	91
MB 410-347893/1-B	Method Blank	98	95

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/4/2023 1:54:12 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180954-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/4/2023 1:54:12 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	18
Surrogate Summary	87
QC Sample Results	92
QC Association Summary	112
Lab Chronicle	121
Certification Summary	131
Chain of Custody	133
Receipt Checklists	139
Isotope Dilution Summary	141

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Eurofins Canton

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Job ID: 240-180954-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180954-1

Comments

No additional comments.

Receipt

The samples were received on 2/26/2023 8:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.4° C.

All soil samples collected in TerraCore kits were frozen within 48hours of collection.

GC/MS VOA

Method 5035: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-SB2325-PELLETS & SOIL (240-180954-1), WC-SB2636-PELLETS & SOIL (240-180954-2), WC-SB1855-PELLETS & SOIL (240-180954-3), WC-SB1252-PELLETS & SOIL (240-180954-4), WC-SB1841-PELLETS & SOIL (240-180954-5), WC-TW-7 (2-4) (240-180954-6), WC-TW-6 (2-4) (240-180954-7), WC-TW-5 (2-4) (240-180954-8), WC-TW-1 (4-6) (240-180954-9), WC-TW-9 (8-10) (240-180954-10), WC-TW-3 (2-4) (240-180954-11), WC-TW-8 (6-8) (240-180954-12), WC-TW-2 (2-4) (240-180954-13), WC-TW-4 (2-4) (240-180954-14) and WC-TW-10 (6-8) (240-180954-15).

Method 8260D: The internal standard 1,4-Dichlorobenzene-d4 was outside acceptance limits for sample WC-SB1855-PELLETS & SOIL (240-180954-3). The target analyte Vinyl Chloride calculates from the internal standard Fluorobenzene, which was within acceptance limits. Therefore the results are reported.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-563777 and analytical batch 240-563784.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-563775 recovered above the upper control limit for 1,1,2-Trichloro-1,2,2-trifluoroethane and Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-SB2325-PELLETS & SOIL (240-180954-1), WC-SB2636-PELLETS & SOIL (240-180954-2), WC-SB1855-PELLETS & SOIL (240-180954-3), WC-SB1252-PELLETS & SOIL (240-180954-4), WC-SB1841-PELLETS & SOIL (240-180954-5), WC-TW-7 (2-4) (240-180954-6), WC-TW-6 (2-4) (240-180954-7), WC-TW-5 (2-4) (240-180954-8), WC-TW-1 (4-6) (240-180954-9), WC-TW-9 (8-10) (240-180954-10), WC-TW-3 (2-4) (240-180954-11), WC-TW-8 (6-8) (240-180954-12), WC-TW-2 (2-4) (240-180954-13), WC-TW-4 (2-4) (240-180954-14), WC-TW-10 (6-8) (240-180954-15), (240-180954-A-1-B MS) and (240-180954-A-1-C MSD).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-563775 was outside the method criteria for the following analyte: Chloromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8260D: The MS/MSD for preparation batch 240-563638 and analytical batch 240-563946 is not reported because it was analyzed in another batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-TW-1 (4-6) (240-180954-9), WC-TW-9 (8-10) (240-180954-10) and WC-TW-3 (2-4) (240-180954-11). Elevated reporting limits (RLs) are provided.

Method 8270E: Surrogate recoveries for the following samples were outside control limits: WC-TW-9 (8-10) (240-180954-10) and WC-TW-3 (2-4) (240-180954-11). Evidence of matrix interference is present.

Method 8270E: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and/or one base surrogate recovery to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Job ID: 240-180954-1 (Continued)

Laboratory: Eurofins Canton (Continued)

surrogate compounds outside limits: (240-180888-A-1-M MS). These results have been reported and qualified.

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-TW-4 (2-4) (240-180954-14) and WC-TW-10 (6-8) (240-180954-15). Elevated reporting limits (RLs) are provided.

Method 8270E: Surrogate recovery for the following samples were outside control limits: WC-TW-4 (2-4) (240-180954-14) and WC-TW-10 (6-8) (240-180954-15). Evidence of matrix interference is present.

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-TW-7 (2-4) (240-180954-6), WC-TW-6 (2-4) (240-180954-7), WC-TW-5 (2-4) (240-180954-8), WC-TW-8 (6-8) (240-180954-12) and WC-TW-2 (2-4) (240-180954-13). Elevated reporting limits (RLs) are provided.

Method 8270E: Surrogate recovery for the following samples were outside control limits: WC-TW-7 (2-4) (240-180954-6), WC-TW-6 (2-4) (240-180954-7), WC-TW-5 (2-4) (240-180954-8) and WC-TW-2 (2-4) (240-180954-13). Evidence of matrix interference is present.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-TW-COMP (TW-1 THRU TW-5) (240-180954-16), WC-TW-COMP (TW-6 THRU TW-10) (240-180954-17) and WC-PELLETS & SOIL-COMP (240-180954-18).

Method 8082A: The DCB surrogate recovery for the following sample was outside acceptance limits (high biased) on the confirmation column due to matrix interference: WC-TW-COMP (TW-1 THRU TW-5) (240-180954-16). The recovery is within acceptance limits on the primary column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1030	Ignitability, Solids	SW846	EET CF
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180954-1	WC-SB2325-PELLETS & SOIL	Solid	02/25/23 16:45	02/26/23 20:20
240-180954-2	WC-SB2636-PELLETS & SOIL	Solid	02/25/23 17:30	02/26/23 20:20
240-180954-3	WC-SB1855-PELLETS & SOIL	Solid	02/25/23 17:05	02/26/23 20:20
240-180954-4	WC-SB1252-PELLETS & SOIL	Solid	02/25/23 17:10	02/26/23 20:20
240-180954-5	WC-SB1841-PELLETS & SOIL	Solid	02/25/23 17:20	02/26/23 20:20
240-180954-6	WC-TW-7 (2-4)	Solid	02/25/23 10:20	02/26/23 20:20
240-180954-7	WC-TW-6 (2-4)	Solid	02/25/23 10:15	02/26/23 20:20
240-180954-8	WC-TW-5 (2-4)	Solid	02/25/23 10:10	02/26/23 20:20
240-180954-9	WC-TW-1 (4-6)	Solid	02/25/23 09:30	02/26/23 20:20
240-180954-10	WC-TW-9 (8-10)	Solid	02/25/23 10:35	02/26/23 20:20
240-180954-11	WC-TW-3 (2-4)	Solid	02/25/23 09:55	02/26/23 20:20
240-180954-12	WC-TW-8 (6-8)	Solid	02/25/23 10:25	02/26/23 20:20
240-180954-13	WC-TW-2 (2-4)	Solid	02/25/23 09:45	02/26/23 20:20
240-180954-14	WC-TW-4 (2-4)	Solid	02/25/23 10:05	02/26/23 20:20
240-180954-15	WC-TW-10 (6-8)	Solid	02/25/23 11:10	02/26/23 20:20
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Solid	02/25/23 00:00	02/26/23 20:20
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Solid	02/25/23 00:00	02/26/23 20:20
240-180954-18	WC-PELLETS & SOIL-COMP	Solid	02/25/23 00:00	02/26/23 20:20



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.10	J	0.54	0.090	mg/Kg	1	☼	8260D	Total/NA
Cyclohexane	0.74	J	1.1	0.35	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	1.6		1.1	0.14	mg/Kg	1	☼	8260D	Total/NA
Tetrachloroethene	0.25	J	0.54	0.21	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.78	J	1.1	0.20	mg/Kg	1	☼	8260D	Total/NA
Butyl benzyl phthalate	8.6		2.2	0.69	mg/Kg	1	☼	8270E	Total/NA
Dimethyl phthalate	0.68	J	2.2	0.44	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.23	J	0.47	0.14	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.23	J	0.47	0.067	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.0066	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.42	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0027	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.048	J	0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.0097	J	0.050	0.0060	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.13	J	0.55	0.092	mg/Kg	1	☼	8260D	Total/NA
Cyclohexane	1.2		1.1	0.36	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.10	J	0.55	0.10	mg/Kg	1	☼	8260D	Total/NA
Isopropylbenzene	0.085	J	0.55	0.084	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	2.8		1.1	0.15	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.54	J	0.55	0.53	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	1.4		1.1	0.20	mg/Kg	1	☼	8260D	Total/NA
2-Ethylhexyl acrylate	5.1	J	5.5	4.1	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.95		0.49	0.064	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.22	J	0.49	0.13	mg/Kg	1	☼	8270E	Total/NA
Anthracene	1.0		0.49	0.079	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.87		0.49	0.11	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.63		0.49	0.31	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	1.3		0.49	0.21	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.38	J	0.49	0.23	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.51		0.49	0.23	mg/Kg	1	☼	8270E	Total/NA
Chrysene	1.8		0.49	0.049	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.69	J	1.6	0.43	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	2.1		0.49	0.15	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.42	J	0.49	0.090	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.40	J	0.49	0.24	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.82		0.49	0.079	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	1.8		0.49	0.073	mg/Kg	1	☼	8270E	Total/NA
Phenol	0.66	J	1.6	0.26	mg/Kg	1	☼	8270E	Total/NA
Pyrene	1.7		0.49	0.070	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.0081	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.47	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0033	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.058		0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.0080	J	0.050	0.0060	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.63	J	1.2	0.38	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	0.94	J	1.2	0.16	mg/Kg	1	☼	8260D	Total/NA
Tetrachloroethene	0.35	J	0.59	0.23	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.52	J	1.2	0.21	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	2.7		0.47	0.061	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.58		0.47	0.089	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.25	J	0.47	0.12	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.55		0.47	0.075	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.85		0.47	0.11	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.45	J	0.47	0.29	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	1.0		0.47	0.20	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.30	J	0.47	0.22	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.49		0.47	0.22	mg/Kg	1	☼	8270E	Total/NA
Chrysene	1.2		0.47	0.046	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.97	J	1.6	0.40	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	1.7		0.47	0.14	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.49		0.47	0.085	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.28	J	0.47	0.23	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	1.4		0.47	0.075	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	2.4		0.47	0.069	mg/Kg	1	☼	8270E	Total/NA
Phenol	0.89	J	1.6	0.25	mg/Kg	1	☼	8270E	Total/NA
Pyrene	1.6		0.47	0.067	mg/Kg	1	☼	8270E	Total/NA
Barium	0.57	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.057		0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.21	J	0.53	0.090	mg/Kg	1	☼	8260D	Total/NA
Cyclohexane	0.62	J	1.1	0.35	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	0.71	J	1.1	0.14	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.60		0.53	0.51	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.70	J	1.1	0.19	mg/Kg	1	☼	8260D	Total/NA
Butyl acrylate	3.4	J	5.3	2.9	mg/Kg	1	☼	8260D	Total/NA
2-Ethylhexyl acrylate	9.4		5.3	4.0	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	2.1		0.47	0.061	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	2.2		0.47	0.089	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.57		0.47	0.12	mg/Kg	1	☼	8270E	Total/NA
Anthracene	1.7		0.47	0.075	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	2.4		0.47	0.11	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	1.3		0.47	0.29	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	3.7		0.47	0.20	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.68		0.47	0.22	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	1.0		0.47	0.22	mg/Kg	1	☼	8270E	Total/NA
Chrysene	3.6		0.47	0.046	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	1.7		1.6	0.40	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	6.0		0.47	0.14	mg/Kg	1	☼	8270E	Total/NA
Fluorene	1.8		0.47	0.085	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.75		0.47	0.23	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	1.6		0.47	0.075	mg/Kg	1	☼	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1252-PELLETS & SOIL (Continued)

Lab Sample ID: 240-180954-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	5.2		0.47	0.069	mg/Kg	1	☼	8270E	Total/NA
Phenol	0.58	J	1.6	0.25	mg/Kg	1	☼	8270E	Total/NA
Pyrene	5.4		0.47	0.066	mg/Kg	1	☼	8270E	Total/NA
Barium	0.42	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0014	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0063	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.090	J	0.52	0.088	mg/Kg	1	☼	8260D	Total/NA
Cyclohexane	0.72	J	1.0	0.34	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	1.4		1.0	0.14	mg/Kg	1	☼	8260D	Total/NA
Tetrachloroethene	0.42	J	0.52	0.20	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.80	J	1.0	0.19	mg/Kg	1	☼	8260D	Total/NA
2-Ethylhexyl acrylate	4.0	J	5.2	3.9	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	1.0		0.48	0.063	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.72		0.48	0.091	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.31	J	0.48	0.13	mg/Kg	1	☼	8270E	Total/NA
Anthracene	1.8		0.48	0.077	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	1.3		0.48	0.11	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.71		0.48	0.30	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	1.6		0.48	0.21	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.43	J	0.48	0.23	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.63		0.48	0.22	mg/Kg	1	☼	8270E	Total/NA
Chrysene	1.7		0.48	0.048	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.59	J	1.6	0.41	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	3.2		0.48	0.14	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.51		0.48	0.087	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.43	J	0.48	0.23	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.84		0.48	0.077	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	1.6		0.48	0.071	mg/Kg	1	☼	8270E	Total/NA
Phenol	1.1	J	1.6	0.26	mg/Kg	1	☼	8270E	Total/NA
Pyrene	2.7		0.48	0.068	mg/Kg	1	☼	8270E	Total/NA
Barium	0.49	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0034	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.10		0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	1.1	J	1.8	0.45	mg/Kg	1	☼	8260D	Total/NA
Benzene	7.2		0.46	0.078	mg/Kg	1	☼	8260D	Total/NA
Chloromethane	0.12	J	0.46	0.12	mg/Kg	1	☼	8260D	Total/NA
Methyl acetate	0.96	J	2.3	0.31	mg/Kg	1	☼	8260D	Total/NA
Butyl acrylate	16		4.6	2.5	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.33		0.091	0.012	mg/Kg	5	☼	8270E	Total/NA
Acetophenone	0.87		0.61	0.067	mg/Kg	5	☼	8270E	Total/NA
Anthracene	0.022	J	0.091	0.015	mg/Kg	5	☼	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.75		0.42	0.31	mg/Kg	5	☼	8270E	Total/NA
Chrysene	0.082	J	0.091	0.0090	mg/Kg	5	☼	8270E	Total/NA
Dibenzofuran	0.16	J	0.30	0.079	mg/Kg	5	☼	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-7 (2-4) (Continued)

Lab Sample ID: 240-180954-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	0.081	J	0.091	0.027	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.045	J	0.091	0.017	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.39		0.091	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.35		0.091	0.014	mg/Kg	5	✳	8270E	Total/NA
Phenol	0.14	J	0.30	0.048	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.069	J	0.091	0.013	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.0098	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.89	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0033	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0084	J	0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.012	J	0.050	0.0060	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.33		0.32	0.054	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.14	J	0.65	0.085	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	4.9		3.2	1.7	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.28		0.19	0.025	mg/Kg	10	✳	8270E	Total/NA
Acetophenone	0.84	J	1.3	0.14	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.14	J	0.19	0.019	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.11	J	0.19	0.057	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.26		0.19	0.031	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.30		0.19	0.029	mg/Kg	10	✳	8270E	Total/NA
Phenol	0.22	J	0.64	0.10	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.097	J	0.19	0.028	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.0061	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.85	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0020	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0042	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.78	J	1.5	0.36	mg/Kg	1	✳	8260D	Total/NA
Benzene	12		0.37	0.063	mg/Kg	1	✳	8260D	Total/NA
Chloromethane	0.17	J	0.37	0.098	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	0.35	J	0.75	0.24	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.068	J	0.37	0.057	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.31	J	1.9	0.25	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	1.1		0.75	0.098	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.36	J	0.37	0.36	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.48	J	0.75	0.14	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	9.6		3.7	2.0	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.66		0.38	0.050	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.84		0.38	0.10	mg/Kg	20	✳	8270E	Total/NA
Acetophenone	0.83	J	2.5	0.28	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.87		0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	2.9		0.38	0.087	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	2.1		0.38	0.24	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	2.9		0.38	0.17	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.3		0.38	0.18	mg/Kg	20	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-5 (2-4) (Continued)

Lab Sample ID: 240-180954-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[k]fluoranthene	1.2		0.38	0.18	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.9		0.38	0.038	mg/Kg	20	✳	8270E	Total/NA
Dibenzofuran	0.56	J	1.3	0.33	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	7.4		0.38	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.84		0.38	0.070	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.2		0.38	0.19	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.68		0.38	0.061	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	6.4		0.38	0.057	mg/Kg	20	✳	8270E	Total/NA
Pyrene	5.6		0.38	0.055	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.0059	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0019	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0063	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00083	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.6		0.25	0.042	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.22	J	0.50	0.066	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.13	J	0.50	0.092	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	21		2.5	1.4	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.78		0.17	0.023	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.066	J	0.17	0.047	mg/Kg	10	✳	8270E	Total/NA
Acetophenone	0.47	J	1.2	0.13	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.053	J	0.17	0.028	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.22		0.17	0.040	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.24		0.17	0.11	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.35		0.17	0.076	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.37		0.17	0.017	mg/Kg	10	✳	8270E	Total/NA
Dibenzofuran	0.44	J	0.58	0.15	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.49		0.17	0.052	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.078	J	0.17	0.032	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.67		0.17	0.028	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.89		0.17	0.026	mg/Kg	10	✳	8270E	Total/NA
Phenol	0.11	J	0.58	0.093	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.44		0.17	0.025	mg/Kg	10	✳	8270E	Total/NA
2-Butoxyethanol	2.8		0.82	0.76	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.0063	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00031	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0093	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Butyl acrylate	220		160	84	mg/Kg	50	✳	8260D	Total/NA
1,1'-Biphenyl	0.12	J	0.32	0.11	mg/Kg	5	✳	8270E	Total/NA
2-Methylnaphthalene	0.65		0.096	0.013	mg/Kg	5	✳	8270E	Total/NA
Acetophenone	0.26	J	0.64	0.070	mg/Kg	5	✳	8270E	Total/NA
Anthracene	0.033	J	0.096	0.015	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]anthracene	0.10		0.096	0.022	mg/Kg	5	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-9 (8-10) (Continued)

Lab Sample ID: 240-180954-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	0.17		0.096	0.0095	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	0.34		0.32	0.083	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	0.15		0.096	0.028	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.026	J	0.096	0.018	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.56		0.096	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.64		0.096	0.014	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.14		0.096	0.014	mg/Kg	5	✳	8270E	Total/NA
Barium	1.0	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00087	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0052	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.67	J	1.3	0.32	mg/Kg	1	✳	8260D	Total/NA
Benzene	9.8		0.33	0.055	mg/Kg	1	✳	8260D	Total/NA
Chloromethane	0.26	J	0.33	0.087	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	0.33	J	0.66	0.21	mg/Kg	1	✳	8260D	Total/NA
Ethylbenzene	0.074	J	0.33	0.062	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.052	J	0.33	0.050	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.65	J	1.6	0.22	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.97		0.66	0.087	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.50		0.33	0.31	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.73		0.66	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	6.2		3.3	1.8	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.089	J	0.15	0.050	mg/Kg	2.5	✳	8270E	Total/NA
2-Methylnaphthalene	0.26		0.044	0.0057	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthylene	0.016	J	0.044	0.012	mg/Kg	2.5	✳	8270E	Total/NA
Acetophenone	0.89		0.29	0.032	mg/Kg	2.5	✳	8270E	Total/NA
Anthracene	0.053		0.044	0.0070	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]anthracene	0.048		0.044	0.0099	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	0.083		0.044	0.0043	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.13	J	0.15	0.038	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	0.084		0.044	0.013	mg/Kg	2.5	✳	8270E	Total/NA
Naphthalene	0.39		0.044	0.0070	mg/Kg	2.5	✳	8270E	Total/NA
Phenanthrene	0.37		0.044	0.0065	mg/Kg	2.5	✳	8270E	Total/NA
Phenol	0.20		0.15	0.023	mg/Kg	2.5	✳	8270E	Total/NA
Pyrene	0.073		0.044	0.0062	mg/Kg	2.5	✳	8270E	Total/NA
Arsenic	0.0052	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.98	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0035	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0076	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00083	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.1	J	12	2.9	mg/Kg	10	✳	8260D	Total/NA
Benzene	0.94	J	3.0	0.51	mg/Kg	10	✳	8260D	Total/NA
Ethylbenzene	0.68	J	3.0	0.57	mg/Kg	10	✳	8260D	Total/NA
Isopropylbenzene	0.80	J	3.0	0.46	mg/Kg	10	✳	8260D	Total/NA
Xylenes, Total	22		6.0	1.1	mg/Kg	10	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-8 (6-8) (Continued)

Lab Sample ID: 240-180954-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Butyl acrylate	60		30	16	mg/Kg	10	✳	8260D	Total/NA
2-Methylnaphthalene	1.2		0.20	0.026	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.055	J	0.20	0.053	mg/Kg	10	✳	8270E	Total/NA
Acetophenone	0.37	J	1.3	0.15	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.058	J	0.20	0.032	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.22		0.20	0.045	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.20		0.20	0.12	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.29		0.20	0.086	mg/Kg	10	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.17	J	0.20	0.094	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.33		0.20	0.020	mg/Kg	10	✳	8270E	Total/NA
Dibenzofuran	0.64	J	0.66	0.17	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.37		0.20	0.059	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	1.1		0.20	0.032	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	1.2		0.20	0.030	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.38		0.20	0.028	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.0060	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.6	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0048	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.044	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0011	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.1	J	2.7	0.45	mg/Kg	10	✳	8260D	Total/NA
Butyl acrylate	49		27	14	mg/Kg	10	✳	8260D	Total/NA
1,1'-Biphenyl	0.083	J	0.12	0.040	mg/Kg	2	✳	8270E	Total/NA
2-Methylnaphthalene	0.28		0.035	0.0046	mg/Kg	2	✳	8270E	Total/NA
Acetophenone	0.70		0.24	0.026	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.020	J	0.035	0.0057	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.035		0.035	0.0080	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.046		0.035	0.015	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.064		0.035	0.0035	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.15		0.12	0.031	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	0.070		0.035	0.010	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.026	J	0.035	0.0064	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	0.31		0.035	0.0057	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	0.26		0.035	0.0052	mg/Kg	2	✳	8270E	Total/NA
Phenol	0.18		0.12	0.019	mg/Kg	2	✳	8270E	Total/NA
Pyrene	0.056		0.035	0.0050	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.0054	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0014	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0076	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00085	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.66	J	1.5	0.36	mg/Kg	1	✳	8260D	Total/NA
Benzene	3.6		0.37	0.062	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.64		0.37	0.056	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-4 (2-4) (Continued)

Lab Sample ID: 240-180954-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl acetate	2.1		1.8	0.25	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.22	J	0.74	0.097	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.19	J	0.74	0.13	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	2.0	J	3.7	2.0	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.18		0.098	0.013	mg/Kg	5	✳	8270E	Total/NA
Acetophenone	0.38	J	0.65	0.072	mg/Kg	5	✳	8270E	Total/NA
Anthracene	0.049	J	0.098	0.016	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]anthracene	0.075	J	0.098	0.022	mg/Kg	5	✳	8270E	Total/NA
Chrysene	0.10		0.098	0.0097	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	0.11	J	0.33	0.085	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	0.14		0.098	0.029	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.042	J	0.098	0.018	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.17		0.098	0.016	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.26		0.098	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenol	0.096	J	0.33	0.052	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.12		0.098	0.014	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	0.44	J	0.46	0.43	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.0041	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.68	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.010	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0043	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.016	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0014	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.59	J	1.5	0.35	mg/Kg	1	✳	8260D	Total/NA
Benzene	7.9		0.36	0.061	mg/Kg	1	✳	8260D	Total/NA
Chloromethane	0.31	J	0.36	0.096	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	0.41	J	0.73	0.24	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.37	J	1.8	0.24	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	1.2		0.73	0.096	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.59	J	0.73	0.13	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	3.5	J	3.6	2.0	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.27		0.094	0.012	mg/Kg	5	✳	8270E	Total/NA
Acetophenone	0.50	J	0.63	0.069	mg/Kg	5	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.059	J	0.094	0.041	mg/Kg	5	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	1.2		0.44	0.32	mg/Kg	5	✳	8270E	Total/NA
Chrysene	0.080	J	0.094	0.0093	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	0.14	J	0.31	0.081	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	0.087	J	0.094	0.028	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.035	J	0.094	0.017	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.30		0.094	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.28		0.094	0.014	mg/Kg	5	✳	8270E	Total/NA
Phenol	0.11	J	0.31	0.050	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.080	J	0.094	0.013	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	0.44		0.44	0.41	mg/Kg	5	✳	8270E	Total/NA
Barium	1.0	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0051	J B	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J	0.050	0.0028	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8) (Continued)

Lab Sample ID: 240-180954-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Silver	0.00087	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.023	J B	0.25	0.0012	mg/L	1		8260D	TCLP
Benzene	0.096		0.025	0.00042	mg/L	1		8260D	TCLP
Aroclor-1268	410		69	22	ug/Kg	1	✳	8082A	Total/NA
Ignitability Screen	Negative				NONE	1		1030	Total/NA

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.016	J B	0.25	0.0012	mg/L	1		8260D	TCLP
Benzene	0.057		0.025	0.00042	mg/L	1		8260D	TCLP
Aroclor-1268	280		67	22	ug/Kg	1	✳	8082A	Total/NA
Ignitability Screen	Negative				NONE	1		1030	Total/NA

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.029	J B	0.25	0.0012	mg/L	1		8260D	TCLP
2-Methylphenol	0.00087	J	0.0040	0.00021	mg/L	1		8270E	TCLP
3 & 4 Methylphenol	0.0013	J	0.0040	0.00019	mg/L	1		8270E	TCLP
Ignitability Screen	Negative				NONE	1		1030	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 95.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.54	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,1,2,2-Tetrachloroethane	ND		0.54	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.54	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,1,2-Trichloroethane	ND		0.54	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,1-Dichloroethane	ND		0.54	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,1-Dichloroethene	ND		0.54	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,2,4-Trichlorobenzene	ND		0.54	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,2-Dibromo-3-Chloropropane	ND		1.1	0.48	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Ethylene Dibromide	ND		0.54	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,2-Dichlorobenzene	ND		0.54	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,2-Dichloroethane	ND		0.54	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,2-Dichloropropane	ND		0.54	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,3-Dichlorobenzene	ND		0.54	0.099	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
1,4-Dichlorobenzene	ND		0.54	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
2-Butanone (MEK)	ND		2.1	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
2-Hexanone	ND		2.1	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
4-Methyl-2-pentanone (MIBK)	ND		2.1	0.51	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Acetone	ND		2.1	0.52	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Benzene	0.10	J	0.54	0.090	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Dichlorobromomethane	ND		0.54	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Bromoform	ND		0.54	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Bromomethane	ND		0.54	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Carbon disulfide	ND		0.54	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Carbon tetrachloride	ND		0.54	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Chlorobenzene	ND		0.54	0.075	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Chloroethane	ND		0.54	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Chloroform	ND		0.54	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Chloromethane	ND		0.54	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
cis-1,2-Dichloroethene	ND		0.54	0.086	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
cis-1,3-Dichloropropene	ND		0.54	0.27	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Cyclohexane	0.74	J	1.1	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Chlorodibromomethane	ND		0.54	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Dichlorodifluoromethane	ND		0.54	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Ethylbenzene	ND		0.54	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Isopropylbenzene	ND		0.54	0.082	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Methyl acetate	ND		2.7	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Methyl tert-butyl ether	ND		0.54	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Methylcyclohexane	1.6		1.1	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Methylene Chloride	ND		1.1	0.82	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Styrene	ND		0.54	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Tetrachloroethene	0.25	J	0.54	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Toluene	ND		0.54	0.52	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
trans-1,2-Dichloroethene	ND		0.54	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
trans-1,3-Dichloropropene	ND		0.54	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Trichloroethene	ND		0.54	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Trichlorofluoromethane	ND		0.54	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Vinyl chloride	ND		0.54	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Xylenes, Total	0.78	J	1.1	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1
Butyl acrylate	ND		5.4	2.9	mg/Kg	✱	02/27/23 17:21	02/28/23 16:55	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 95.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.1	0.25	mg/Kg	☼	02/27/23 17:21	02/28/23 16:55	1
2-Ethylhexyl acrylate	ND		5.4	4.0	mg/Kg	☼	02/27/23 17:21	02/28/23 16:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125				02/27/23 17:21	02/28/23 16:55	1
Dibromofluoromethane (Surr)	77		41 - 138				02/27/23 17:21	02/28/23 16:55	1
4-Bromofluorobenzene (Surr)	71		41 - 143				02/27/23 17:21	02/28/23 16:55	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				02/27/23 17:21	02/28/23 16:55	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.53	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
bis (2-chloroisopropyl) ether	ND		3.1	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4,5-Trichlorophenol	ND		4.7	2.2	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4,6-Trichlorophenol	ND		4.7	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4-Dichlorophenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4-Dimethylphenol	ND		4.7	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4-Dinitrophenol	ND		10	4.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,4-Dinitrotoluene	ND		6.3	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2,6-Dinitrotoluene	ND		6.3	1.8	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Chlorophenol	ND		1.6	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Methylnaphthalene	ND		0.47	0.061	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Methylphenol	ND		6.3	0.97	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Nitroaniline	ND		6.3	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
2-Nitrophenol	ND		1.6	0.41	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
3,3'-Dichlorobenzidine	ND		3.1	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
3-Nitroaniline	ND		6.3	1.5	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Chloro-3-methylphenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Chloroaniline	ND		4.7	0.94	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Nitroaniline	ND		6.3	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
4-Nitrophenol	ND		10	2.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Acenaphthene	ND		0.47	0.089	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Acenaphthylene	ND		0.47	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Acetophenone	ND		3.1	0.34	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Anthracene	ND		0.47	0.075	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Atrazine	ND		6.3	1.1	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzaldehyde	ND		3.1	0.72	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzo[a]anthracene	ND		0.47	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzo[a]pyrene	ND		0.47	0.29	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzo[b]fluoranthene	ND		0.47	0.20	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzo[g,h,i]perylene	ND		0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Benzo[k]fluoranthene	ND		0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Bis(2-chloroethoxy)methane	ND		3.1	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Bis(2-chloroethyl)ether	ND		3.1	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1
Butyl benzyl phthalate	8.6		2.2	0.69	mg/Kg	☼	02/27/23 11:53	03/01/23 16:11	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 95.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.3	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Carbazole	ND		1.6	0.59	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Chrysene	ND		0.47	0.047	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Dibenz(a,h)anthracene	ND		0.47	0.22	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Dibenzofuran	ND		1.6	0.41	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Diethyl phthalate	ND		2.2	0.97	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Dimethyl phthalate	0.68	J	2.2	0.44	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Di-n-octyl phthalate	ND		2.2	0.88	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Fluoranthene	0.23	J	0.47	0.14	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Fluorene	ND		0.47	0.086	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Hexachlorobenzene	ND		0.47	0.089	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Hexachlorobutadiene	ND		1.6	0.38	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Hexachlorocyclopentadiene	ND		10	1.9	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Hexachloroethane	ND		1.6	0.28	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Indeno[1,2,3-cd]pyrene	ND		0.47	0.23	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Isophorone	ND		1.6	0.38	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
N-Nitrosodi-n-propylamine	ND		1.6	0.34	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
N-Nitrosodiphenylamine	ND		1.6	0.38	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Naphthalene	ND		0.47	0.075	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Nitrobenzene	ND		3.1	0.41	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Pentachlorophenol	ND		4.7	1.8	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Phenanthrene	ND		0.47	0.070	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Phenol	ND		1.6	0.25	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
Pyrene	0.23	J	0.47	0.067	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
3 & 4 Methylphenol	ND		13	0.91	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1
2-Butoxyethanol	ND		2.2	2.0	mg/Kg	☆	02/27/23 11:53	03/01/23 16:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	54		46 - 137	02/27/23 11:53	03/01/23 16:11	1
Phenol-d5 (Surr)	43		26 - 120	02/27/23 11:53	03/01/23 16:11	1
Nitrobenzene-d5 (Surr)	35		25 - 120	02/27/23 11:53	03/01/23 16:11	1
2-Fluorophenol (Surr)	40		20 - 120	02/27/23 11:53	03/01/23 16:11	1
2-Fluorobiphenyl (Surr)	42		34 - 120	02/27/23 11:53	03/01/23 16:11	1
2,4,6-Tribromophenol (Surr)	42		10 - 120	02/27/23 11:53	03/01/23 16:11	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0066	J B	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 06:10	1
Barium	0.42	J B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 06:10	1
Cadmium	0.0027	J	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 06:10	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 06:10	1
Lead	0.048	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 06:10	1
Selenium	0.0097	J	0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 06:10	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 06:10	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 11:52	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 95.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	95.9		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	4.1		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 91.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.55	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,1,2,2-Tetrachloroethane	ND		0.55	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.55	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,1,2-Trichloroethane	ND		0.55	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,1-Dichloroethane	ND		0.55	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,1-Dichloroethene	ND		0.55	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,2,4-Trichlorobenzene	ND		0.55	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,2-Dibromo-3-Chloropropane	ND		1.1	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Ethylene Dibromide	ND		0.55	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,2-Dichlorobenzene	ND		0.55	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,2-Dichloroethane	ND		0.55	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,2-Dichloropropane	ND		0.55	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,3-Dichlorobenzene	ND		0.55	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
1,4-Dichlorobenzene	ND		0.55	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
2-Butanone (MEK)	ND		2.2	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
2-Hexanone	ND		2.2	0.58	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
4-Methyl-2-pentanone (MIBK)	ND		2.2	0.52	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Acetone	ND		2.2	0.54	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Benzene	0.13	J	0.55	0.092	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Dichlorobromomethane	ND		0.55	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Bromoform	ND		0.55	0.50	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Bromomethane	ND		0.55	0.37	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Carbon disulfide	ND		0.55	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Carbon tetrachloride	ND		0.55	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Chlorobenzene	ND		0.55	0.077	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Chloroethane	ND		0.55	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Chloroform	ND		0.55	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Chloromethane	ND		0.55	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
cis-1,2-Dichloroethene	ND		0.55	0.088	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
cis-1,3-Dichloropropene	ND		0.55	0.27	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Cyclohexane	1.2		1.1	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Chlorodibromomethane	ND		0.55	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Dichlorodifluoromethane	ND		0.55	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Ethylbenzene	0.10	J	0.55	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Isopropylbenzene	0.085	J	0.55	0.084	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Methyl acetate	ND		2.8	0.37	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Methyl tert-butyl ether	ND		0.55	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Methylcyclohexane	2.8		1.1	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Methylene Chloride	ND		1.1	0.84	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Styrene	ND		0.55	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Tetrachloroethene	ND		0.55	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Toluene	0.54	J	0.55	0.53	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
trans-1,2-Dichloroethene	ND		0.55	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
trans-1,3-Dichloropropene	ND		0.55	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Trichloroethene	ND		0.55	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Trichlorofluoromethane	ND		0.55	0.30	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Vinyl chloride	ND		0.55	0.27	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Xylenes, Total	1.4		1.1	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1
Butyl acrylate	ND		5.5	3.0	mg/Kg	✱	02/27/23 17:21	02/28/23 18:03	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 91.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.1	0.26	mg/Kg	☼	02/27/23 17:21	02/28/23 18:03	1
2-Ethylhexyl acrylate	5.1	J	5.5	4.1	mg/Kg	☼	02/27/23 17:21	02/28/23 18:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	80		56 - 125				02/27/23 17:21	02/28/23 18:03	1
<i>Dibromofluoromethane (Surr)</i>	75		41 - 138				02/27/23 17:21	02/28/23 18:03	1
<i>4-Bromofluorobenzene (Surr)</i>	74		41 - 143				02/27/23 17:21	02/28/23 18:03	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	74		58 - 125				02/27/23 17:21	02/28/23 18:03	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.56	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
bis (2-chloroisopropyl) ether	ND		3.3	0.33	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4,5-Trichlorophenol	ND		4.9	2.3	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4,6-Trichlorophenol	ND		4.9	2.1	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4-Dichlorophenol	ND		4.9	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4-Dimethylphenol	ND		4.9	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4-Dinitrophenol	ND		11	4.6	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,4-Dinitrotoluene	ND		6.5	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2,6-Dinitrotoluene	ND		6.5	1.8	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Chloronaphthalene	ND		1.6	0.46	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Chlorophenol	ND		1.6	0.33	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Methylnaphthalene	0.95		0.49	0.064	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Methylphenol	ND		6.5	1.0	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Nitroaniline	ND		6.5	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Nitrophenol	ND		1.6	0.43	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
3,3'-Dichlorobenzidine	ND		3.3	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
3-Nitroaniline	ND		6.5	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4,6-Dinitro-2-methylphenol	ND		11	2.6	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Bromophenyl phenyl ether	ND		1.6	0.46	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Chloro-3-methylphenol	ND		4.9	1.5	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Chloroaniline	ND		4.9	0.98	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Chlorophenyl phenyl ether	ND		1.6	0.46	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Nitroaniline	ND		6.5	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
4-Nitrophenol	ND		11	3.1	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Acenaphthene	ND		0.49	0.094	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Acenaphthylene	0.22	J	0.49	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Acetophenone	ND		3.3	0.36	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Anthracene	1.0		0.49	0.079	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Atrazine	ND		6.5	1.2	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzaldehyde	ND		3.3	0.75	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzo[a]anthracene	0.87		0.49	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzo[a]pyrene	0.63		0.49	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzo[b]fluoranthene	1.3		0.49	0.21	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzo[g,h,i]perylene	0.38	J	0.49	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Benzo[k]fluoranthene	0.51		0.49	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Bis(2-chloroethoxy)methane	ND		3.3	0.39	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Bis(2-chloroethyl)ether	ND		3.3	0.39	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Bis(2-ethylhexyl) phthalate	ND		2.3	1.7	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Butyl benzyl phthalate	ND		2.3	0.72	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 91.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		11	2.5	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Carbazole	ND		1.6	0.62	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Chrysene	1.8		0.49	0.049	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Dibenz(a,h)anthracene	ND		0.49	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Dibenzofuran	0.69 J		1.6	0.43	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Diethyl phthalate	ND		2.3	1.0	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Dimethyl phthalate	ND		2.3	0.46	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Di-n-butyl phthalate	ND		2.3	1.7	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Di-n-octyl phthalate	ND		2.3	0.92	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Fluoranthene	2.1		0.49	0.15	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Fluorene	0.42 J		0.49	0.090	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Hexachlorobenzene	ND		0.49	0.093	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Hexachlorobutadiene	ND		1.6	0.39	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Hexachlorocyclopentadiene	ND		11	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Hexachloroethane	ND		1.6	0.29	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Indeno[1,2,3-cd]pyrene	0.40 J		0.49	0.24	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Isophorone	ND		1.6	0.39	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
N-Nitrosodi-n-propylamine	ND		1.6	0.36	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
N-Nitrosodiphenylamine	ND		1.6	0.39	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Naphthalene	0.82		0.49	0.079	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Nitrobenzene	ND		3.3	0.43	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Pentachlorophenol	ND		4.9	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Phenanthrene	1.8		0.49	0.073	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Phenol	0.66 J		1.6	0.26	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
Pyrene	1.7		0.49	0.070	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
3 & 4 Methylphenol	ND		13	0.95	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1
2-Butoxyethanol	ND		2.3	2.1	mg/Kg	☼	02/27/23 11:53	03/01/23 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		46 - 137	02/27/23 11:53	03/01/23 15:47	1
Phenol-d5 (Surr)	71		26 - 120	02/27/23 11:53	03/01/23 15:47	1
Nitrobenzene-d5 (Surr)	60		25 - 120	02/27/23 11:53	03/01/23 15:47	1
2-Fluorophenol (Surr)	64		20 - 120	02/27/23 11:53	03/01/23 15:47	1
2-Fluorobiphenyl (Surr)	77		34 - 120	02/27/23 11:53	03/01/23 15:47	1
2,4,6-Tribromophenol (Surr)	65		10 - 120	02/27/23 11:53	03/01/23 15:47	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0081	J B	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 06:32	1
Barium	0.47	J B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 06:32	1
Cadmium	0.0033	J	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 06:32	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 06:32	1
Lead	0.058		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 06:32	1
Selenium	0.0080	J	0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 06:32	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 06:32	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:04	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 91.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	91.7		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	8.3		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 96.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.59	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,1,2,2-Tetrachloroethane	ND		0.59	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.59	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,1,2-Trichloroethane	ND		0.59	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,1-Dichloroethane	ND		0.59	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,1-Dichloroethene	ND		0.59	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,2,4-Trichlorobenzene	ND		0.59	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,2-Dibromo-3-Chloropropane	ND		1.2	0.52	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Ethylene Dibromide	ND		0.59	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,2-Dichlorobenzene	ND		0.59	0.28	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,2-Dichloroethane	ND		0.59	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,2-Dichloropropane	ND		0.59	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,3-Dichlorobenzene	ND		0.59	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
1,4-Dichlorobenzene	ND		0.59	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
2-Butanone (MEK)	ND		2.4	0.37	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
2-Hexanone	ND		2.4	0.62	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
4-Methyl-2-pentanone (MIBK)	ND		2.4	0.56	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Acetone	ND		2.4	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Benzene	ND		0.59	0.099	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Dichlorobromomethane	ND		0.59	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Bromoform	ND		0.59	0.54	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Bromomethane	ND		0.59	0.39	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Carbon disulfide	ND		0.59	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Carbon tetrachloride	ND		0.59	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Chlorobenzene	ND		0.59	0.082	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Chloroethane	ND		0.59	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Chloroform	ND		0.59	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Chloromethane	ND		0.59	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
cis-1,2-Dichloroethene	ND		0.59	0.094	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
cis-1,3-Dichloropropene	ND		0.59	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Cyclohexane	0.63	J	1.2	0.38	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Chlorodibromomethane	ND		0.59	0.28	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Dichlorodifluoromethane	ND		0.59	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Ethylbenzene	ND		0.59	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Isopropylbenzene	ND		0.59	0.089	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Methyl acetate	ND		2.9	0.40	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Methyl tert-butyl ether	ND		0.59	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Methylcyclohexane	0.94	J	1.2	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Methylene Chloride	ND		1.2	0.90	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Styrene	ND		0.59	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Tetrachloroethene	0.35	J	0.59	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Toluene	ND		0.59	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
trans-1,2-Dichloroethene	ND		0.59	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
trans-1,3-Dichloropropene	ND		0.59	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Trichloroethene	ND		0.59	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Trichlorofluoromethane	ND		0.59	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Vinyl chloride	ND		0.011	0.0040	mg/Kg	✱	02/26/23 10:31	02/28/23 19:10	1
Xylenes, Total	0.52	J	1.2	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1
Butyl acrylate	ND		5.9	3.2	mg/Kg	✱	02/27/23 17:21	02/28/23 18:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 96.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.2	0.28	mg/Kg	☼	02/27/23 17:21	02/28/23 18:25	1
2-Ethylhexyl acrylate	ND		5.9	4.4	mg/Kg	☼	02/27/23 17:21	02/28/23 18:25	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125				02/27/23 17:21	02/28/23 18:25	1
Toluene-d8 (Surr)	109		56 - 125				02/26/23 10:31	02/28/23 19:10	1
Dibromofluoromethane (Surr)	78		41 - 138				02/27/23 17:21	02/28/23 18:25	1
Dibromofluoromethane (Surr)	105		41 - 138				02/26/23 10:31	02/28/23 19:10	1
4-Bromofluorobenzene (Surr)	74		41 - 143				02/27/23 17:21	02/28/23 18:25	1
4-Bromofluorobenzene (Surr)	136	*3	41 - 143				02/26/23 10:31	02/28/23 19:10	1
1,2-Dichloroethane-d4 (Surr)	77		58 - 125				02/27/23 17:21	02/28/23 18:25	1
1,2-Dichloroethane-d4 (Surr)	97		58 - 125				02/26/23 10:31	02/28/23 19:10	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.53	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
bis (2-chloroisopropyl) ether	ND		3.1	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4,5-Trichlorophenol	ND		4.7	2.1	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4,6-Trichlorophenol	ND		4.7	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4-Dichlorophenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4-Dimethylphenol	ND		4.7	1.2	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4-Dinitrophenol	ND		10	4.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,4-Dinitrotoluene	ND		6.2	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2,6-Dinitrotoluene	ND		6.2	1.7	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Chlorophenol	ND		1.6	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Methylnaphthalene	2.7		0.47	0.061	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Methylphenol	ND		6.2	0.97	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Nitroaniline	ND		6.2	1.2	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
2-Nitrophenol	ND		1.6	0.40	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
3,3'-Dichlorobenzidine	ND		3.1	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
3-Nitroaniline	ND		6.2	1.5	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Chloro-3-methylphenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Chloroaniline	ND		4.7	0.93	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Nitroaniline	ND		6.2	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
4-Nitrophenol	ND		10	2.9	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Acenaphthene	0.58		0.47	0.089	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Acenaphthylene	0.25	J	0.47	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Acetophenone	ND		3.1	0.34	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Anthracene	0.55		0.47	0.075	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Atrazine	ND		6.2	1.1	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzaldehyde	ND		3.1	0.72	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzo[a]anthracene	0.85		0.47	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzo[a]pyrene	0.45	J	0.47	0.29	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzo[b]fluoranthene	1.0		0.47	0.20	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzo[g,h,i]perylene	0.30	J	0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1
Benzo[k]fluoranthene	0.49		0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 16:36	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 96.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		3.1	0.37	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Bis(2-chloroethyl)ether	ND		3.1	0.37	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Butyl benzyl phthalate	ND		2.2	0.68	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Caprolactam	ND		10	2.3	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Carbazole	ND		1.6	0.59	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Chrysene	1.2		0.47	0.046	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Dibenz(a,h)anthracene	ND		0.47	0.22	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Dibenzofuran	0.97	J	1.6	0.40	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Diethyl phthalate	ND		2.2	0.97	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Dimethyl phthalate	ND		2.2	0.44	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Di-n-octyl phthalate	ND		2.2	0.87	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Fluoranthene	1.7		0.47	0.14	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Fluorene	0.49		0.47	0.085	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Hexachlorobenzene	ND		0.47	0.089	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Hexachlorobutadiene	ND		1.6	0.37	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Hexachlorocyclopentadiene	ND		10	1.9	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Hexachloroethane	ND		1.6	0.28	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Indeno[1,2,3-cd]pyrene	0.28	J	0.47	0.23	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Isophorone	ND		1.6	0.37	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
N-Nitrosodi-n-propylamine	ND		1.6	0.34	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
N-Nitrosodiphenylamine	ND		1.6	0.37	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Naphthalene	1.4		0.47	0.075	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Nitrobenzene	ND		3.1	0.40	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Pentachlorophenol	ND		4.7	1.8	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Phenanthrene	2.4		0.47	0.069	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Phenol	0.89	J	1.6	0.25	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
Pyrene	1.6		0.47	0.067	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
3 & 4 Methylphenol	ND		12	0.90	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1
2-Butoxyethanol	ND		2.2	2.0	mg/Kg	*	02/27/23 11:53	03/01/23 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	85		46 - 137	02/27/23 11:53	03/01/23 16:36	1
Phenol-d5 (Surr)	65		26 - 120	02/27/23 11:53	03/01/23 16:36	1
Nitrobenzene-d5 (Surr)	60		25 - 120	02/27/23 11:53	03/01/23 16:36	1
2-Fluorophenol (Surr)	59		20 - 120	02/27/23 11:53	03/01/23 16:36	1
2-Fluorobiphenyl (Surr)	70		34 - 120	02/27/23 11:53	03/01/23 16:36	1
2,4,6-Tribromophenol (Surr)	62		10 - 120	02/27/23 11:53	03/01/23 16:36	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 06:36	1
Barium	0.57	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 06:36	1
Cadmium	0.0024	J	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 06:36	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 06:36	1
Lead	0.057		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 06:36	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 06:36	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 06:36	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 96.4

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	96.4		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	3.6		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.53	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,1,2,2-Tetrachloroethane	ND		0.53	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.53	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,1,2-Trichloroethane	ND		0.53	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,1-Dichloroethane	ND		0.53	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,1-Dichloroethene	ND		0.53	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,2,4-Trichlorobenzene	ND		0.53	0.28	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,2-Dibromo-3-Chloropropane	ND		1.1	0.47	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Ethylene Dibromide	ND		0.53	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,2-Dichlorobenzene	ND		0.53	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,2-Dichloroethane	ND		0.53	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,2-Dichloropropane	ND		0.53	0.079	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,3-Dichlorobenzene	ND		0.53	0.098	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
1,4-Dichlorobenzene	ND		0.53	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
2-Butanone (MEK)	ND		2.1	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
2-Hexanone	ND		2.1	0.56	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
4-Methyl-2-pentanone (MIBK)	ND		2.1	0.51	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Acetone	ND		2.1	0.52	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Benzene	0.21	J	0.53	0.090	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Dichlorobromomethane	ND		0.53	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Bromoform	ND		0.53	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Bromomethane	ND		0.53	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Carbon disulfide	ND		0.53	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Carbon tetrachloride	ND		0.53	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Chlorobenzene	ND		0.53	0.075	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Chloroethane	ND		0.53	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Chloroform	ND		0.53	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Chloromethane	ND		0.53	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
cis-1,2-Dichloroethene	ND		0.53	0.085	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
cis-1,3-Dichloropropene	ND		0.53	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Cyclohexane	0.62	J	1.1	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Chlorodibromomethane	ND		0.53	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Dichlorodifluoromethane	ND		0.53	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Ethylbenzene	ND		0.53	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Isopropylbenzene	ND		0.53	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Methyl acetate	ND		2.7	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Methyl tert-butyl ether	ND		0.53	0.079	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Methylcyclohexane	0.71	J	1.1	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Methylene Chloride	ND		1.1	0.82	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Styrene	ND		0.53	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Tetrachloroethene	ND		0.53	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Toluene	0.60		0.53	0.51	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
trans-1,2-Dichloroethene	ND		0.53	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
trans-1,3-Dichloropropene	ND		0.53	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Trichloroethene	ND		0.53	0.30	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Trichlorofluoromethane	ND		0.53	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Vinyl chloride	ND		0.53	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Xylenes, Total	0.70	J	1.1	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1
Butyl acrylate	3.4	J	5.3	2.9	mg/Kg	✱	02/27/23 17:21	02/28/23 18:46	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.1	0.25	mg/Kg	☼	02/27/23 17:21	02/28/23 18:46	1
2-Ethylhexyl acrylate	9.4		5.3	4.0	mg/Kg	☼	02/27/23 17:21	02/28/23 18:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	79		56 - 125				02/27/23 17:21	02/28/23 18:46	1
<i>Dibromofluoromethane (Surr)</i>	78		41 - 138				02/27/23 17:21	02/28/23 18:46	1
<i>4-Bromofluorobenzene (Surr)</i>	74		41 - 143				02/27/23 17:21	02/28/23 18:46	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	78		58 - 125				02/27/23 17:21	02/28/23 18:46	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.53	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
bis (2-chloroisopropyl) ether	ND		3.1	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4,5-Trichlorophenol	ND		4.7	2.1	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4,6-Trichlorophenol	ND		4.7	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4-Dichlorophenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4-Dimethylphenol	ND		4.7	1.2	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4-Dinitrophenol	ND		10	4.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,4-Dinitrotoluene	ND		6.2	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2,6-Dinitrotoluene	ND		6.2	1.7	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Chloronaphthalene	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Chlorophenol	ND		1.6	0.31	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Methylnaphthalene	2.1		0.47	0.061	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Methylphenol	ND		6.2	0.96	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Nitroaniline	ND		6.2	1.2	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
2-Nitrophenol	ND		1.6	0.40	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
3,3'-Dichlorobenzidine	ND		3.1	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
3-Nitroaniline	ND		6.2	1.5	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4,6-Dinitro-2-methylphenol	ND		10	2.5	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Bromophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Chloro-3-methylphenol	ND		4.7	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Chloroaniline	ND		4.7	0.93	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Chlorophenyl phenyl ether	ND		1.6	0.44	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Nitroaniline	ND		6.2	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
4-Nitrophenol	ND		10	2.9	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Acenaphthene	2.2		0.47	0.089	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Acenaphthylene	0.57		0.47	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Acetophenone	ND		3.1	0.34	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Anthracene	1.7		0.47	0.075	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Atrazine	ND		6.2	1.1	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzaldehyde	ND		3.1	0.71	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzo[a]anthracene	2.4		0.47	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzo[a]pyrene	1.3		0.47	0.29	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzo[b]fluoranthene	3.7		0.47	0.20	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzo[g,h,i]perylene	0.68		0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Benzo[k]fluoranthene	1.0		0.47	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Bis(2-chloroethoxy)methane	ND		3.1	0.37	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Bis(2-chloroethyl)ether	ND		3.1	0.37	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1
Butyl benzyl phthalate	ND		2.2	0.68	mg/Kg	☼	02/27/23 11:53	03/01/23 17:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		10	2.3	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Carbazole	ND		1.6	0.59	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Chrysene	3.6		0.47	0.046	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Dibenz(a,h)anthracene	ND		0.47	0.22	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Dibenzofuran	1.7		1.6	0.40	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Diethyl phthalate	ND		2.2	0.96	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Dimethyl phthalate	ND		2.2	0.44	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Di-n-octyl phthalate	ND		2.2	0.87	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Fluoranthene	6.0		0.47	0.14	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Fluorene	1.8		0.47	0.085	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Hexachlorobenzene	ND		0.47	0.089	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Hexachlorobutadiene	ND		1.6	0.37	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Hexachlorocyclopentadiene	ND		10	1.9	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Hexachloroethane	ND		1.6	0.28	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Indeno[1,2,3-cd]pyrene	0.75		0.47	0.23	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Isophorone	ND		1.6	0.37	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
N-Nitrosodi-n-propylamine	ND		1.6	0.34	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
N-Nitrosodiphenylamine	ND		1.6	0.37	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Naphthalene	1.6		0.47	0.075	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Nitrobenzene	ND		3.1	0.40	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Pentachlorophenol	ND		4.7	1.8	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Phenanthrene	5.2		0.47	0.069	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Phenol	0.58 J		1.6	0.25	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
Pyrene	5.4		0.47	0.066	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
3 & 4 Methylphenol	ND		12	0.90	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1
2-Butoxyethanol	ND		2.2	2.0	mg/Kg	✳	02/27/23 11:53	03/01/23 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	88		46 - 137	02/27/23 11:53	03/01/23 17:00	1
Phenol-d5 (Surr)	73		26 - 120	02/27/23 11:53	03/01/23 17:00	1
Nitrobenzene-d5 (Surr)	62		25 - 120	02/27/23 11:53	03/01/23 17:00	1
2-Fluorophenol (Surr)	64		20 - 120	02/27/23 11:53	03/01/23 17:00	1
2-Fluorobiphenyl (Surr)	77		34 - 120	02/27/23 11:53	03/01/23 17:00	1
2,4,6-Tribromophenol (Surr)	68		10 - 120	02/27/23 11:53	03/01/23 17:00	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 06:41	1
Barium	0.42 J B		0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 06:41	1
Cadmium	0.0014 J		0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 06:41	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 06:41	1
Lead	0.0063 J		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 06:41	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 06:41	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 06:41	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	93.7		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	6.3		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 92.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.52	0.16	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,1,2,2-Tetrachloroethane	ND		0.52	0.31	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.52	0.14	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,1,2-Trichloroethane	ND		0.52	0.12	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,1-Dichloroethane	ND		0.52	0.10	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,1-Dichloroethene	ND		0.52	0.17	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,2,4-Trichlorobenzene	ND		0.52	0.28	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.46	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Ethylene Dibromide	ND		0.52	0.17	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,2-Dichlorobenzene	ND		0.52	0.25	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,2-Dichloroethane	ND		0.52	0.098	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,2-Dichloropropane	ND		0.52	0.077	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,3-Dichlorobenzene	ND		0.52	0.096	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
1,4-Dichlorobenzene	ND		0.52	0.11	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
2-Butanone (MEK)	ND		2.1	0.33	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
2-Hexanone	ND		2.1	0.55	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
4-Methyl-2-pentanone (MIBK)	ND		2.1	0.50	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Acetone	ND		2.1	0.51	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Benzene	0.090	J	0.52	0.088	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Dichlorobromomethane	ND		0.52	0.13	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Bromoform	ND		0.52	0.48	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Bromomethane	ND		0.52	0.35	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Carbon disulfide	ND		0.52	0.23	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Carbon tetrachloride	ND		0.52	0.21	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Chlorobenzene	ND		0.52	0.073	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Chloroethane	ND		0.52	0.31	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Chloroform	ND		0.52	0.11	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Chloromethane	ND		0.52	0.14	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
cis-1,2-Dichloroethene	ND		0.52	0.084	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
cis-1,3-Dichloropropene	ND		0.52	0.26	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Cyclohexane	0.72	J	1.0	0.34	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Chlorodibromomethane	ND		0.52	0.24	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Dichlorodifluoromethane	ND		0.52	0.11	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Ethylbenzene	ND		0.52	0.098	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Isopropylbenzene	ND		0.52	0.079	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Methyl acetate	ND		2.6	0.35	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Methyl tert-butyl ether	ND		0.52	0.077	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Methylcyclohexane	1.4		1.0	0.14	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Methylene Chloride	ND		1.0	0.80	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Styrene	ND		0.52	0.11	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Tetrachloroethene	0.42	J	0.52	0.20	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Toluene	ND		0.52	0.50	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
trans-1,2-Dichloroethene	ND		0.52	0.13	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
trans-1,3-Dichloropropene	ND		0.52	0.22	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Trichloroethene	ND		0.52	0.30	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Trichlorofluoromethane	ND		0.52	0.29	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Vinyl chloride	ND		0.52	0.26	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Xylenes, Total	0.80	J	1.0	0.19	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1
Butyl acrylate	ND		5.2	2.8	mg/Kg	✳	02/27/23 17:21	02/28/23 19:07	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 92.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.0	0.25	mg/Kg	☼	02/27/23 17:21	02/28/23 19:07	1
2-Ethylhexyl acrylate	4.0	J	5.2	3.9	mg/Kg	☼	02/27/23 17:21	02/28/23 19:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	81		56 - 125				02/27/23 17:21	02/28/23 19:07	1
<i>Dibromofluoromethane (Surr)</i>	78		41 - 138				02/27/23 17:21	02/28/23 19:07	1
<i>4-Bromofluorobenzene (Surr)</i>	72		41 - 143				02/27/23 17:21	02/28/23 19:07	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	76		58 - 125				02/27/23 17:21	02/28/23 19:07	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.6	0.54	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
bis (2-chloroisopropyl) ether	ND		3.2	0.32	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4,5-Trichlorophenol	ND		4.8	2.2	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4,6-Trichlorophenol	ND		4.8	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4-Dichlorophenol	ND		4.8	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4-Dimethylphenol	ND		4.8	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4-Dinitrophenol	ND		11	4.5	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,4-Dinitrotoluene	ND		6.4	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2,6-Dinitrotoluene	ND		6.4	1.8	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Chloronaphthalene	ND		1.6	0.45	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Chlorophenol	ND		1.6	0.32	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Methylnaphthalene	1.0		0.48	0.063	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Methylphenol	ND		6.4	0.99	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Nitroaniline	ND		6.4	1.3	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Nitrophenol	ND		1.6	0.41	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
3,3'-Dichlorobenzidine	ND		3.2	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
3-Nitroaniline	ND		6.4	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4,6-Dinitro-2-methylphenol	ND		11	2.6	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Bromophenyl phenyl ether	ND		1.6	0.45	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Chloro-3-methylphenol	ND		4.8	1.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Chloroaniline	ND		4.8	0.96	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Chlorophenyl phenyl ether	ND		1.6	0.45	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Nitroaniline	ND		6.4	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
4-Nitrophenol	ND		11	3.0	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Acenaphthene	0.72		0.48	0.091	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Acenaphthylene	0.31	J	0.48	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Acetophenone	ND		3.2	0.35	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Anthracene	1.8		0.48	0.077	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Atrazine	ND		6.4	1.1	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzaldehyde	ND		3.2	0.73	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzo[a]anthracene	1.3		0.48	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzo[a]pyrene	0.71		0.48	0.30	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzo[b]fluoranthene	1.6		0.48	0.21	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzo[g,h,i]perylene	0.43	J	0.48	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Benzo[k]fluoranthene	0.63		0.48	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Bis(2-chloroethoxy)methane	ND		3.2	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Bis(2-chloroethyl)ether	ND		3.2	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		2.2	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Butyl benzyl phthalate	ND		2.2	0.70	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 92.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		11	2.4	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Carbazole	ND		1.6	0.61	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Chrysene	1.7		0.48	0.048	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Dibenz(a,h)anthracene	ND		0.48	0.22	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Dibenzofuran	0.59	J	1.6	0.41	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Diethyl phthalate	ND		2.2	0.99	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Dimethyl phthalate	ND		2.2	0.45	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Di-n-butyl phthalate	ND		2.2	1.6	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Di-n-octyl phthalate	ND		2.2	0.89	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Fluoranthene	3.2		0.48	0.14	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Fluorene	0.51		0.48	0.087	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Hexachlorobenzene	ND		0.48	0.091	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Hexachlorobutadiene	ND		1.6	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Hexachlorocyclopentadiene	ND		11	2.0	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Hexachloroethane	ND		1.6	0.29	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Indeno[1,2,3-cd]pyrene	0.43	J	0.48	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Isophorone	ND		1.6	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
N-Nitrosodi-n-propylamine	ND		1.6	0.35	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
N-Nitrosodiphenylamine	ND		1.6	0.38	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Naphthalene	0.84		0.48	0.077	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Nitrobenzene	ND		3.2	0.41	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Pentachlorophenol	ND		4.8	1.9	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Phenanthrene	1.6		0.48	0.071	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Phenol	1.1	J	1.6	0.26	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
Pyrene	2.7		0.48	0.068	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
3 & 4 Methylphenol	ND		13	0.93	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1
2-Butoxyethanol	ND		2.2	2.1	mg/Kg	☼	02/27/23 11:53	03/01/23 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		46 - 137	02/27/23 11:53	03/01/23 17:25	1
Phenol-d5 (Surr)	65		26 - 120	02/27/23 11:53	03/01/23 17:25	1
Nitrobenzene-d5 (Surr)	56		25 - 120	02/27/23 11:53	03/01/23 17:25	1
2-Fluorophenol (Surr)	61		20 - 120	02/27/23 11:53	03/01/23 17:25	1
2-Fluorobiphenyl (Surr)	71		34 - 120	02/27/23 11:53	03/01/23 17:25	1
2,4,6-Tribromophenol (Surr)	60		10 - 120	02/27/23 11:53	03/01/23 17:25	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 06:54	1
Barium	0.49	J B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 06:54	1
Cadmium	0.0034	J	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 06:54	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 06:54	1
Lead	0.10		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 06:54	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 06:54	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 06:54	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:11	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 92.1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	92.1		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	7.9		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 82.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.46	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,1,2,2-Tetrachloroethane	ND		0.46	0.28	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.46	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,1,2-Trichloroethane	ND		0.46	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,1-Dichloroethane	ND		0.46	0.089	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,1-Dichloroethene	ND		0.46	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,2,4-Trichlorobenzene	ND		0.46	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,2-Dibromo-3-Chloropropane	ND		0.92	0.41	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Ethylene Dibromide	ND		0.46	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,2-Dichlorobenzene	ND		0.46	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,2-Dichloroethane	ND		0.46	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,2-Dichloropropane	ND		0.46	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,3-Dichlorobenzene	ND		0.46	0.085	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
1,4-Dichlorobenzene	ND		0.46	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
2-Butanone (MEK)	ND		1.8	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
2-Hexanone	ND		1.8	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
4-Methyl-2-pentanone (MIBK)	ND		1.8	0.44	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Acetone	1.1	J	1.8	0.45	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Benzene	7.2		0.46	0.078	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Dichlorobromomethane	ND		0.46	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Bromoform	ND		0.46	0.42	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Bromomethane	ND		0.46	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Carbon disulfide	ND		0.46	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Carbon tetrachloride	ND		0.46	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Chlorobenzene	ND		0.46	0.065	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Chloroethane	ND		0.46	0.28	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Chloroform	ND		0.46	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Chloromethane	0.12	J	0.46	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
cis-1,2-Dichloroethene	ND		0.46	0.074	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
cis-1,3-Dichloropropene	ND		0.46	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Cyclohexane	ND		0.92	0.30	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Chlorodibromomethane	ND		0.46	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Dichlorodifluoromethane	ND		0.46	0.098	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Ethylbenzene	ND		0.46	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Isopropylbenzene	ND		0.46	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Methyl acetate	0.96	J	2.3	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Methyl tert-butyl ether	ND		0.46	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Methylcyclohexane	ND		0.92	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Methylene Chloride	ND		0.92	0.71	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Styrene	ND		0.46	0.096	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Tetrachloroethene	ND		0.46	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Toluene	ND		0.46	0.44	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
trans-1,2-Dichloroethene	ND		0.46	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
trans-1,3-Dichloropropene	ND		0.46	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Trichloroethene	ND		0.46	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Trichlorofluoromethane	ND		0.46	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Vinyl chloride	ND		0.46	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Xylenes, Total	ND		0.92	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1
Butyl acrylate	16		4.6	2.5	mg/Kg	✱	02/27/23 17:21	02/28/23 19:29	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 82.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.92	0.22	mg/Kg	☆	02/27/23 17:21	02/28/23 19:29	1
2-Ethylhexyl acrylate	ND		4.6	3.4	mg/Kg	☆	02/27/23 17:21	02/28/23 19:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125				02/27/23 17:21	02/28/23 19:29	1
Dibromofluoromethane (Surr)	77		41 - 138				02/27/23 17:21	02/28/23 19:29	1
4-Bromofluorobenzene (Surr)	72		41 - 143				02/27/23 17:21	02/28/23 19:29	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				02/27/23 17:21	02/28/23 19:29	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.30	0.10	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
bis (2-chloroisopropyl) ether	ND		0.61	0.061	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4,5-Trichlorophenol	ND		0.91	0.42	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4,6-Trichlorophenol	ND		0.91	0.39	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4-Dichlorophenol	ND		0.91	0.27	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4-Dimethylphenol	ND		0.91	0.24	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4-Dinitrophenol	ND		2.0	0.86	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,4-Dinitrotoluene	ND		1.2	0.38	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2,6-Dinitrotoluene	ND		1.2	0.34	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Chloronaphthalene	ND		0.30	0.085	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Chlorophenol	ND		0.30	0.061	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Methylnaphthalene	0.33		0.091	0.012	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Methylphenol	ND		1.2	0.19	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Nitroaniline	ND		1.2	0.24	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
2-Nitrophenol	ND		0.30	0.079	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
3,3'-Dichlorobenzidine	ND		0.61	0.26	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
3-Nitroaniline	ND		1.2	0.30	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4,6-Dinitro-2-methylphenol	ND		2.0	0.48	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Bromophenyl phenyl ether	ND		0.30	0.085	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Chloro-3-methylphenol	ND		0.91	0.27	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Chloroaniline	ND		0.91	0.18	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Chlorophenyl phenyl ether	ND		0.30	0.085	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Nitroaniline	ND		1.2	0.36	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
4-Nitrophenol	ND		2.0	0.57	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Acenaphthene	ND		0.091	0.017	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Acenaphthylene	ND		0.091	0.024	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Acetophenone	0.87		0.61	0.067	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Anthracene	0.022 J		0.091	0.015	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Atrazine	ND		1.2	0.22	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzaldehyde	ND		0.61	0.14	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzo[a]anthracene	ND		0.091	0.021	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzo[a]pyrene	ND		0.091	0.057	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzo[b]fluoranthene	ND		0.091	0.039	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzo[g,h,i]perylene	ND		0.091	0.043	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Benzo[k]fluoranthene	ND		0.091	0.042	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Bis(2-chloroethoxy)methane	ND		0.61	0.073	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Bis(2-chloroethyl)ether	ND		0.61	0.073	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Bis(2-ethylhexyl) phthalate	0.75		0.42	0.31	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5
Butyl benzyl phthalate	ND		0.42	0.13	mg/Kg	☆	02/27/23 11:53	03/03/23 13:48	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 82.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.0	0.45	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Carbazole	ND		0.30	0.12	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Chrysene	0.082	J	0.091	0.0090	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Dibenz(a,h)anthracene	ND		0.091	0.042	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Dibenzofuran	0.16	J	0.30	0.079	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Diethyl phthalate	ND		0.42	0.19	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Dimethyl phthalate	ND		0.42	0.085	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Di-n-butyl phthalate	ND		0.42	0.31	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Di-n-octyl phthalate	ND		0.42	0.17	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Fluoranthene	0.081	J	0.091	0.027	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Fluorene	0.045	J	0.091	0.017	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Hexachlorobenzene	ND		0.091	0.017	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Hexachlorobutadiene	ND		0.30	0.073	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Hexachlorocyclopentadiene	ND		2.0	0.38	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Hexachloroethane	ND		0.30	0.055	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Indeno[1,2,3-cd]pyrene	ND		0.091	0.045	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Isophorone	ND		0.30	0.073	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
N-Nitrosodi-n-propylamine	ND		0.30	0.067	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
N-Nitrosodiphenylamine	ND		0.30	0.073	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Naphthalene	0.39		0.091	0.015	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Nitrobenzene	ND		0.61	0.079	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Pentachlorophenol	ND		0.91	0.35	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Phenanthrene	0.35		0.091	0.014	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Phenol	0.14	J	0.30	0.048	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
Pyrene	0.069	J	0.091	0.013	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
3 & 4 Methylphenol	ND		2.4	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5
2-Butoxyethanol	ND		0.42	0.40	mg/Kg	☼	02/27/23 11:53	03/03/23 13:48	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	17	S1-	46 - 137	02/27/23 11:53	03/03/23 13:48	5
Phenol-d5 (Surr)	17	S1-	26 - 120	02/27/23 11:53	03/03/23 13:48	5
Nitrobenzene-d5 (Surr)	16	S1-	25 - 120	02/27/23 11:53	03/03/23 13:48	5
2-Fluorophenol (Surr)	14	S1-	20 - 120	02/27/23 11:53	03/03/23 13:48	5
2-Fluorobiphenyl (Surr)	15	S1-	34 - 120	02/27/23 11:53	03/03/23 13:48	5
2,4,6-Tribromophenol (Surr)	14		10 - 120	02/27/23 11:53	03/03/23 13:48	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0098	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:15	1
Barium	0.89	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:15	1
Cadmium	0.0033	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:15	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:15	1
Lead	0.0084	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:15	1
Selenium	0.012	J	0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:15	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:15	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:21	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 82.6

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.6		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	17.4		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.32	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,1,2,2-Tetrachloroethane	ND		0.32	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,1,2-Trichloroethane	ND		0.32	0.074	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,1-Dichloroethane	ND		0.32	0.062	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,1-Dichloroethene	ND		0.32	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,2,4-Trichlorobenzene	ND		0.32	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,2-Dibromo-3-Chloropropane	ND		0.65	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Ethylene Dibromide	ND		0.32	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,2-Dichlorobenzene	ND		0.32	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,2-Dichloroethane	ND		0.32	0.061	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,2-Dichloropropane	ND		0.32	0.048	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,3-Dichlorobenzene	ND		0.32	0.059	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
1,4-Dichlorobenzene	ND		0.32	0.071	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
2-Butanone (MEK)	ND		1.3	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
2-Hexanone	ND		1.3	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Acetone	ND		1.3	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Benzene	0.33		0.32	0.054	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Dichlorobromomethane	ND		0.32	0.079	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Bromoform	ND		0.32	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Bromomethane	ND		0.32	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Carbon disulfide	ND		0.32	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Carbon tetrachloride	ND		0.32	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Chlorobenzene	ND		0.32	0.045	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Chloroethane	ND		0.32	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Chloroform	ND		0.32	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Chloromethane	ND		0.32	0.085	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
cis-1,2-Dichloroethene	ND		0.32	0.052	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
cis-1,3-Dichloropropene	ND		0.32	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Cyclohexane	ND		0.65	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Chlorodibromomethane	ND		0.32	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Dichlorodifluoromethane	ND		0.32	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Ethylbenzene	ND		0.32	0.061	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Isopropylbenzene	ND		0.32	0.049	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Methyl acetate	ND		1.6	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Methyl tert-butyl ether	ND		0.32	0.048	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Methylcyclohexane	0.14 J		0.65	0.085	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Methylene Chloride	ND		0.65	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Styrene	ND		0.32	0.067	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Tetrachloroethene	ND		0.32	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Toluene	ND		0.32	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
trans-1,2-Dichloroethene	ND		0.32	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
trans-1,3-Dichloropropene	ND		0.32	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Trichloroethene	ND		0.32	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Trichlorofluoromethane	ND		0.32	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Vinyl chloride	ND		0.32	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Xylenes, Total	ND		0.65	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1
Butyl acrylate	4.9		3.2	1.7	mg/Kg	✱	02/27/23 17:21	02/28/23 19:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.65	0.15	mg/Kg	☼	02/27/23 17:21	02/28/23 19:50	1
2-Ethylhexyl acrylate	ND		3.2	2.4	mg/Kg	☼	02/27/23 17:21	02/28/23 19:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125				02/27/23 17:21	02/28/23 19:50	1
Dibromofluoromethane (Surr)	76		41 - 138				02/27/23 17:21	02/28/23 19:50	1
4-Bromofluorobenzene (Surr)	72		41 - 143				02/27/23 17:21	02/28/23 19:50	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125				02/27/23 17:21	02/28/23 19:50	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.64	0.22	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
bis (2-chloroisopropyl) ether	ND		1.3	0.13	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4,5-Trichlorophenol	ND		1.9	0.89	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4,6-Trichlorophenol	ND		1.9	0.82	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4-Dichlorophenol	ND		1.9	0.57	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4-Dimethylphenol	ND		1.9	0.52	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4-Dinitrophenol	ND		4.2	1.8	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,4-Dinitrotoluene	ND		2.6	0.80	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2,6-Dinitrotoluene	ND		2.6	0.72	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Chloronaphthalene	ND		0.64	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Chlorophenol	ND		0.64	0.13	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Methylnaphthalene	0.28		0.19	0.025	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Methylphenol	ND		2.6	0.40	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Nitroaniline	ND		2.6	0.52	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
2-Nitrophenol	ND		0.64	0.17	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
3,3'-Dichlorobenzidine	ND		1.3	0.55	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
3-Nitroaniline	ND		2.6	0.63	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4,6-Dinitro-2-methylphenol	ND		4.2	1.0	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Bromophenyl phenyl ether	ND		0.64	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Chloro-3-methylphenol	ND		1.9	0.58	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Chloroaniline	ND		1.9	0.39	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Chlorophenyl phenyl ether	ND		0.64	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Nitroaniline	ND		2.6	0.77	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
4-Nitrophenol	ND		4.2	1.2	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Acenaphthene	ND		0.19	0.037	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Acenaphthylene	ND		0.19	0.052	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Acetophenone	0.84 J		1.3	0.14	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Anthracene	ND		0.19	0.031	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Atrazine	ND		2.6	0.46	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzaldehyde	ND		1.3	0.30	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzo[a]anthracene	ND		0.19	0.044	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzo[a]pyrene	ND		0.19	0.12	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzo[b]fluoranthene	ND		0.19	0.084	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzo[g,h,i]perylene	ND		0.19	0.091	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Benzo[k]fluoranthene	ND		0.19	0.089	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Bis(2-chloroethoxy)methane	ND		1.3	0.15	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Bis(2-chloroethyl)ether	ND		1.3	0.15	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Bis(2-ethylhexyl) phthalate	ND		0.90	0.66	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10
Butyl benzyl phthalate	ND		0.90	0.28	mg/Kg	☼	02/27/23 11:53	03/03/23 13:24	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		4.2	0.97	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Carbazole	ND		0.64	0.24	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Chrysene	0.14	J	0.19	0.019	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Dibenz(a,h)anthracene	ND		0.19	0.089	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Dibenzofuran	ND		0.64	0.17	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Diethyl phthalate	ND		0.90	0.40	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Dimethyl phthalate	ND		0.90	0.18	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Di-n-butyl phthalate	ND		0.90	0.65	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Di-n-octyl phthalate	ND		0.90	0.36	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Fluoranthene	0.11	J	0.19	0.057	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Fluorene	ND		0.19	0.035	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Hexachlorobenzene	ND		0.19	0.037	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Hexachlorobutadiene	ND		0.64	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Hexachlorocyclopentadiene	ND		4.2	0.80	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Hexachloroethane	ND		0.64	0.12	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Indeno[1,2,3-cd]pyrene	ND		0.19	0.095	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Isophorone	ND		0.64	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
N-Nitrosodi-n-propylamine	ND		0.64	0.14	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
N-Nitrosodiphenylamine	ND		0.64	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Naphthalene	0.26		0.19	0.031	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Nitrobenzene	ND		1.3	0.17	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Pentachlorophenol	ND		1.9	0.75	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Phenanthrene	0.30		0.19	0.029	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Phenol	0.22	J	0.64	0.10	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
Pyrene	0.097	J	0.19	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
3 & 4 Methylphenol	ND		5.2	0.37	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10
2-Butoxyethanol	ND		0.90	0.84	mg/Kg	✳	02/27/23 11:53	03/03/23 13:24	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	26	S1-	46 - 137	02/27/23 11:53	03/03/23 13:24	10
Phenol-d5 (Surr)	28		26 - 120	02/27/23 11:53	03/03/23 13:24	10
Nitrobenzene-d5 (Surr)	24	S1-	25 - 120	02/27/23 11:53	03/03/23 13:24	10
2-Fluorophenol (Surr)	21		20 - 120	02/27/23 11:53	03/03/23 13:24	10
2-Fluorobiphenyl (Surr)	23	S1-	34 - 120	02/27/23 11:53	03/03/23 13:24	10
2,4,6-Tribromophenol (Surr)	21		10 - 120	02/27/23 11:53	03/03/23 13:24	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0061	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:45	1
Barium	0.85	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:45	1
Cadmium	0.0020	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:45	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:45	1
Lead	0.0042	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:45	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:45	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:33	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.5		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	22.5		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.37	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,1,2,2-Tetrachloroethane	ND		0.37	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.37	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,1,2-Trichloroethane	ND		0.37	0.085	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,1-Dichloroethane	ND		0.37	0.072	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,1-Dichloroethene	ND		0.37	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,2,4-Trichlorobenzene	ND		0.37	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,2-Dibromo-3-Chloropropane	ND		0.75	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Ethylene Dibromide	ND		0.37	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,2-Dichlorobenzene	ND		0.37	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,2-Dichloroethane	ND		0.37	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,2-Dichloropropane	ND		0.37	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,3-Dichlorobenzene	ND		0.37	0.069	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
1,4-Dichlorobenzene	ND		0.37	0.082	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
2-Hexanone	ND		1.5	0.39	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Acetone	0.78	J	1.5	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Benzene	12		0.37	0.063	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Dichlorobromomethane	ND		0.37	0.091	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Bromoform	ND		0.37	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Bromomethane	ND		0.37	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Carbon disulfide	ND		0.37	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Carbon tetrachloride	ND		0.37	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Chlorobenzene	ND		0.37	0.052	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Chloroethane	ND		0.37	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Chloroform	ND		0.37	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Chloromethane	0.17	J	0.37	0.098	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
cis-1,2-Dichloroethene	ND		0.37	0.060	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
cis-1,3-Dichloropropene	ND		0.37	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Cyclohexane	0.35	J	0.75	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Chlorodibromomethane	ND		0.37	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Dichlorodifluoromethane	ND		0.37	0.079	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Ethylbenzene	ND		0.37	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Isopropylbenzene	0.068	J	0.37	0.057	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Methyl acetate	0.31	J	1.9	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Methyl tert-butyl ether	ND		0.37	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Methylcyclohexane	1.1		0.75	0.098	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Methylene Chloride	ND		0.75	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Styrene	ND		0.37	0.078	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Tetrachloroethene	ND		0.37	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Toluene	0.36	J	0.37	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
trans-1,2-Dichloroethene	ND		0.37	0.093	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
trans-1,3-Dichloropropene	ND		0.37	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Trichloroethene	ND		0.37	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Trichlorofluoromethane	ND		0.37	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Vinyl chloride	ND		0.37	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Xylenes, Total	0.48	J	0.75	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1
Butyl acrylate	9.6		3.7	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 20:11	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.75	0.18	mg/Kg	☼	02/27/23 17:21	02/28/23 20:11	1
2-Ethylhexyl acrylate	ND		3.7	2.8	mg/Kg	☼	02/27/23 17:21	02/28/23 20:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125				02/27/23 17:21	02/28/23 20:11	1
Dibromofluoromethane (Surr)	77		41 - 138				02/27/23 17:21	02/28/23 20:11	1
4-Bromofluorobenzene (Surr)	73		41 - 143				02/27/23 17:21	02/28/23 20:11	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				02/27/23 17:21	02/28/23 20:11	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.43	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4,5-Trichlorophenol	ND		3.8	1.8	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4,6-Trichlorophenol	ND		3.8	1.6	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4-Dichlorophenol	ND		3.8	1.1	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4-Dimethylphenol	ND		3.8	1.0	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4-Dinitrophenol	ND		8.4	3.6	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,4-Dinitrotoluene	ND		5.1	1.6	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2,6-Dinitrotoluene	ND		5.1	1.4	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Chlorophenol	ND		1.3	0.25	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Methylnaphthalene	0.66		0.38	0.050	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Methylphenol	ND		5.1	0.79	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Nitroaniline	ND		5.1	1.0	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
2-Nitrophenol	ND		1.3	0.33	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
3-Nitroaniline	ND		5.1	1.2	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4,6-Dinitro-2-methylphenol	ND		8.4	2.0	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Chloro-3-methylphenol	ND		3.8	1.1	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Chloroaniline	ND		3.8	0.76	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Nitroaniline	ND		5.1	1.5	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
4-Nitrophenol	ND		8.4	2.4	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Acenaphthene	ND		0.38	0.073	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Acenaphthylene	0.84		0.38	0.10	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Acetophenone	0.83 J		2.5	0.28	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Anthracene	0.87		0.38	0.061	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Atrazine	ND		5.1	0.92	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzaldehyde	ND		2.5	0.59	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzo[a]anthracene	2.9		0.38	0.087	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzo[a]pyrene	2.1		0.38	0.24	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzo[b]fluoranthene	2.9		0.38	0.17	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzo[g,h,i]perylene	1.3		0.38	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Benzo[k]fluoranthene	1.2		0.38	0.18	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Bis(2-chloroethoxy)methane	ND		2.5	0.31	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Bis(2-chloroethyl)ether	ND		2.5	0.31	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20
Butyl benzyl phthalate	ND		1.8	0.56	mg/Kg	☼	02/27/23 11:53	03/03/23 11:11	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		8.4	1.9	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Carbazole	ND		1.3	0.48	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Chrysene	2.9		0.38	0.038	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Dibenz(a,h)anthracene	ND		0.38	0.18	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Dibenzofuran	0.56	J	1.3	0.33	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Diethyl phthalate	ND		1.8	0.79	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Dimethyl phthalate	ND		1.8	0.36	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Di-n-octyl phthalate	ND		1.8	0.71	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Fluoranthene	7.4		0.38	0.11	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Fluorene	0.84		0.38	0.070	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Hexachlorobenzene	ND		0.38	0.073	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Hexachlorobutadiene	ND		1.3	0.31	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Hexachlorocyclopentadiene	ND		8.4	1.6	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Hexachloroethane	ND		1.3	0.23	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Indeno[1,2,3-cd]pyrene	1.2		0.38	0.19	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Isophorone	ND		1.3	0.31	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
N-Nitrosodiphenylamine	ND		1.3	0.31	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Naphthalene	0.68		0.38	0.061	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Nitrobenzene	ND		2.5	0.33	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Pentachlorophenol	ND		3.8	1.5	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Phenanthrene	6.4		0.38	0.057	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Phenol	ND		1.3	0.20	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
Pyrene	5.6		0.38	0.055	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
3 & 4 Methylphenol	ND		10	0.74	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20
2-Butoxyethanol	ND		1.8	1.7	mg/Kg	☆	02/27/23 11:53	03/03/23 11:11	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	35	S1-	46 - 137	02/27/23 11:53	03/03/23 11:11	20
Phenol-d5 (Surr)	23	S1-	26 - 120	02/27/23 11:53	03/03/23 11:11	20
Nitrobenzene-d5 (Surr)	32		25 - 120	02/27/23 11:53	03/03/23 11:11	20
2-Fluorophenol (Surr)	24		20 - 120	02/27/23 11:53	03/03/23 11:11	20
2-Fluorobiphenyl (Surr)	27	S1-	34 - 120	02/27/23 11:53	03/03/23 11:11	20
2,4,6-Tribromophenol (Surr)	34		10 - 120	02/27/23 11:53	03/03/23 11:11	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0059	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:50	1
Barium	1.1	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:50	1
Cadmium	0.0019	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:50	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:50	1
Lead	0.0063	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:50	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:50	1
Silver	0.00083	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:50	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:36	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.8		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	22.2		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
2-Hexanone	ND		1.0	0.26	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Acetone	ND		1.0	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Benzene	2.6		0.25	0.042	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Bromoform	ND		0.25	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Bromomethane	ND		0.25	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Carbon disulfide	ND		0.25	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Chlorobenzene	ND		0.25	0.035	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Chloroethane	ND		0.25	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Chloroform	ND		0.25	0.054	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Chloromethane	ND		0.25	0.066	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Cyclohexane	ND		0.50	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Ethylbenzene	ND		0.25	0.047	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Methyl acetate	ND		1.3	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Methylcyclohexane	0.22 J		0.50	0.066	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Methylene Chloride	ND		0.50	0.39	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Styrene	ND		0.25	0.052	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Tetrachloroethene	ND		0.25	0.098	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Toluene	ND		0.25	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Trichloroethene	ND		0.25	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Vinyl chloride	ND		0.25	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Xylenes, Total	0.13 J		0.50	0.092	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1
Butyl acrylate	21		2.5	1.4	mg/Kg	✱	02/27/23 17:21	02/28/23 20:32	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.50	0.12	mg/Kg	☼	02/27/23 17:21	02/28/23 20:32	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg	☼	02/27/23 17:21	02/28/23 20:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125				02/27/23 17:21	02/28/23 20:32	1
Dibromofluoromethane (Surr)	77		41 - 138				02/27/23 17:21	02/28/23 20:32	1
4-Bromofluorobenzene (Surr)	72		41 - 143				02/27/23 17:21	02/28/23 20:32	1
1,2-Dichloroethane-d4 (Surr)	76		58 - 125				02/27/23 17:21	02/28/23 20:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.58	0.20	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4,5-Trichlorophenol	ND		1.7	0.80	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4,6-Trichlorophenol	ND		1.7	0.75	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4-Dichlorophenol	ND		1.7	0.51	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4-Dimethylphenol	ND		1.7	0.47	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4-Dinitrophenol	ND		3.8	1.7	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,4-Dinitrotoluene	ND		2.3	0.72	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2,6-Dinitrotoluene	ND		2.3	0.65	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Chloronaphthalene	ND		0.58	0.16	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Chlorophenol	ND		0.58	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Methylnaphthalene	0.78		0.17	0.023	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Methylphenol	ND		2.3	0.36	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Nitroaniline	ND		2.3	0.47	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
2-Nitrophenol	ND		0.58	0.15	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
3,3'-Dichlorobenzidine	ND		1.2	0.50	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
3-Nitroaniline	ND		2.3	0.57	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4,6-Dinitro-2-methylphenol	ND		3.8	0.93	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Bromophenyl phenyl ether	ND		0.58	0.16	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Chloro-3-methylphenol	ND		1.7	0.52	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Chloroaniline	ND		1.7	0.35	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Chlorophenyl phenyl ether	ND		0.58	0.16	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Nitroaniline	ND		2.3	0.70	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
4-Nitrophenol	ND		3.8	1.1	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Acenaphthene	ND		0.17	0.033	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Acenaphthylene	0.066	J	0.17	0.047	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Acetophenone	0.47	J	1.2	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Anthracene	0.053	J	0.17	0.028	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Atrazine	ND		2.3	0.42	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzaldehyde	ND		1.2	0.27	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzo[a]anthracene	0.22		0.17	0.040	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzo[a]pyrene	0.24		0.17	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzo[b]fluoranthene	0.35		0.17	0.076	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzo[g,h,i]perylene	ND		0.17	0.083	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Benzo[k]fluoranthene	ND		0.17	0.081	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Bis(2-chloroethoxy)methane	ND		1.2	0.14	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Bis(2-chloroethyl)ether	ND		1.2	0.14	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Bis(2-ethylhexyl) phthalate	ND		0.82	0.59	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10
Butyl benzyl phthalate	ND		0.82	0.26	mg/Kg	☼	02/27/23 11:53	03/01/23 18:38	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		3.8	0.87	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Carbazole	ND		0.58	0.22	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Chrysene	0.37		0.17	0.017	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Dibenz(a,h)anthracene	ND		0.17	0.081	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Dibenzofuran	0.44	J	0.58	0.15	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Diethyl phthalate	ND		0.82	0.36	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Dimethyl phthalate	ND		0.82	0.16	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Di-n-butyl phthalate	ND		0.82	0.59	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Di-n-octyl phthalate	ND		0.82	0.33	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Fluoranthene	0.49		0.17	0.052	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Fluorene	0.078	J	0.17	0.032	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Hexachlorobenzene	ND		0.17	0.033	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Hexachlorobutadiene	ND		0.58	0.14	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Hexachlorocyclopentadiene	ND		3.8	0.72	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Hexachloroethane	ND		0.58	0.10	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Indeno[1,2,3-cd]pyrene	ND		0.17	0.086	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Isophorone	ND		0.58	0.14	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
N-Nitrosodi-n-propylamine	ND		0.58	0.13	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
N-Nitrosodiphenylamine	ND		0.58	0.14	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Naphthalene	0.67		0.17	0.028	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Nitrobenzene	ND		1.2	0.15	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Pentachlorophenol	ND		1.7	0.68	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Phenanthrene	0.89		0.17	0.026	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Phenol	0.11	J	0.58	0.093	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
Pyrene	0.44		0.17	0.025	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
3 & 4 Methylphenol	ND		4.7	0.34	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10
2-Butoxyethanol	2.8		0.82	0.76	mg/Kg	✳	02/27/23 11:53	03/01/23 18:38	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	49		46 - 137	02/27/23 11:53	03/01/23 18:38	10
Phenol-d5 (Surr)	48		26 - 120	02/27/23 11:53	03/01/23 18:38	10
Nitrobenzene-d5 (Surr)	47		25 - 120	02/27/23 11:53	03/01/23 18:38	10
2-Fluorophenol (Surr)	38		20 - 120	02/27/23 11:53	03/01/23 18:38	10
2-Fluorobiphenyl (Surr)	48		34 - 120	02/27/23 11:53	03/01/23 18:38	10
2,4,6-Tribromophenol (Surr)	40		10 - 120	02/27/23 11:53	03/01/23 18:38	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0063	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:54	1
Barium	1.1	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:54	1
Cadmium	0.00031	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:54	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:54	1
Lead	0.0093	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:54	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:54	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:54	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.8		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	15.2		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 78.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		16	4.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,1,2,2-Tetrachloroethane	ND		16	9.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		16	4.2	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,1,2-Trichloroethane	ND		16	3.6	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,1-Dichloroethane	ND		16	3.0	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,1-Dichloroethene	ND		16	5.1	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,2,4-Trichlorobenzene	ND		16	8.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,2-Dibromo-3-Chloropropane	ND		31	14	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Ethylene Dibromide	ND		16	4.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,2-Dichlorobenzene	ND		16	7.5	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,2-Dichloroethane	ND		16	2.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,2-Dichloropropane	ND		16	2.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,3-Dichlorobenzene	ND		16	2.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
1,4-Dichlorobenzene	ND		16	3.4	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
2-Butanone (MEK)	ND		62	9.8	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
2-Hexanone	ND		62	16	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
4-Methyl-2-pentanone (MIBK)	ND		62	15	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Acetone	ND		62	15	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Benzene	ND		16	2.6	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Dichlorobromomethane	ND		16	3.8	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Bromoform	ND		16	14	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Bromomethane	ND		16	10	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Carbon disulfide	ND		16	6.7	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Carbon tetrachloride	ND		16	6.4	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Chlorobenzene	ND		16	2.2	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Chloroethane	ND		16	9.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Chloroform	ND		16	3.4	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Chloromethane	ND		16	4.1	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
cis-1,2-Dichloroethene	ND		16	2.5	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
cis-1,3-Dichloropropene	ND		16	7.7	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Cyclohexane	ND		31	10	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Chlorodibromomethane	ND		16	7.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Dichlorodifluoromethane	ND		16	3.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Ethylbenzene	ND		16	2.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Isopropylbenzene	ND		16	2.4	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Methyl acetate	ND		78	10	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Methyl tert-butyl ether	ND		16	2.3	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Methylcyclohexane	ND		31	4.1	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Methylene Chloride	ND		31	24	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Styrene	ND		16	3.2	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Tetrachloroethene	ND		16	6.0	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Toluene	ND		16	15	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
trans-1,2-Dichloroethene	ND		16	3.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
trans-1,3-Dichloropropene	ND		16	6.5	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Trichloroethene	ND		16	8.9	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Trichlorofluoromethane	ND		16	8.5	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Vinyl chloride	ND		0.31	0.15	mg/Kg	✳	02/27/23 17:21	03/02/23 00:56	1
Xylenes, Total	ND		31	5.7	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Butyl acrylate	220		160	84	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 78.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		31	7.4	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
2-Ethylhexyl acrylate	ND		160	120	mg/Kg	✳	02/27/23 17:21	02/28/23 20:54	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	83		56 - 125				02/27/23 17:21	02/28/23 20:54	50
Toluene-d8 (Surr)	108		56 - 125				02/27/23 17:21	03/02/23 00:56	1
Dibromofluoromethane (Surr)	86		41 - 138				02/27/23 17:21	02/28/23 20:54	50
Dibromofluoromethane (Surr)	97		41 - 138				02/27/23 17:21	03/02/23 00:56	1
4-Bromofluorobenzene (Surr)	75		41 - 143				02/27/23 17:21	02/28/23 20:54	50
4-Bromofluorobenzene (Surr)	104		41 - 143				02/27/23 17:21	03/02/23 00:56	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				02/27/23 17:21	02/28/23 20:54	50
1,2-Dichloroethane-d4 (Surr)	86		58 - 125				02/27/23 17:21	03/02/23 00:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.12	J	0.32	0.11	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
bis (2-chloroisopropyl) ether	ND		0.64	0.064	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4,5-Trichlorophenol	ND		0.96	0.44	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4,6-Trichlorophenol	ND		0.96	0.41	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4-Dichlorophenol	ND		0.96	0.28	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4-Dimethylphenol	ND		0.96	0.26	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4-Dinitrophenol	ND		2.1	0.91	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,4-Dinitrotoluene	ND		1.3	0.40	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2,6-Dinitrotoluene	ND		1.3	0.36	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Chloronaphthalene	ND		0.32	0.090	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Chlorophenol	ND		0.32	0.064	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Methylnaphthalene	0.65		0.096	0.013	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Methylphenol	ND		1.3	0.20	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Nitroaniline	ND		1.3	0.26	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Nitrophenol	ND		0.32	0.083	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
3,3'-Dichlorobenzidine	ND		0.64	0.28	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
3-Nitroaniline	ND		1.3	0.31	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4,6-Dinitro-2-methylphenol	ND		2.1	0.51	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Bromophenyl phenyl ether	ND		0.32	0.090	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Chloro-3-methylphenol	ND		0.96	0.29	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Chloroaniline	ND		0.96	0.19	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Chlorophenyl phenyl ether	ND		0.32	0.090	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Nitroaniline	ND		1.3	0.38	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
4-Nitrophenol	ND		2.1	0.60	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Acenaphthene	ND		0.096	0.018	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Acenaphthylene	ND		0.096	0.026	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Acetophenone	0.26	J	0.64	0.070	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Anthracene	0.033	J	0.096	0.015	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Atrazine	ND		1.3	0.23	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzaldehyde	ND		0.64	0.15	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzo[a]anthracene	0.10		0.096	0.022	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzo[a]pyrene	ND		0.096	0.060	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzo[b]fluoranthene	ND		0.096	0.042	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzo[g,h,i]perylene	ND		0.096	0.045	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Benzo[k]fluoranthene	ND		0.096	0.044	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 78.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.64	0.077	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Bis(2-chloroethyl)ether	ND		0.64	0.077	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Bis(2-ethylhexyl) phthalate	ND		0.45	0.33	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Butyl benzyl phthalate	ND		0.45	0.14	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Caprolactam	ND		2.1	0.48	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Carbazole	ND		0.32	0.12	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Chrysene	0.17		0.096	0.0095	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Dibenz(a,h)anthracene	ND		0.096	0.044	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Dibenzofuran	0.34		0.32	0.083	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Diethyl phthalate	ND		0.45	0.20	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Dimethyl phthalate	ND		0.45	0.090	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Di-n-butyl phthalate	ND		0.45	0.32	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Di-n-octyl phthalate	ND		0.45	0.18	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Fluoranthene	0.15		0.096	0.028	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Fluorene	0.026	J	0.096	0.018	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Hexachlorobenzene	ND		0.096	0.018	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Hexachlorobutadiene	ND		0.32	0.077	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Hexachlorocyclopentadiene	ND		2.1	0.40	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Hexachloroethane	ND		0.32	0.058	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Indeno[1,2,3-cd]pyrene	ND		0.096	0.047	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Isophorone	ND		0.32	0.077	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
N-Nitrosodi-n-propylamine	ND		0.32	0.070	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
N-Nitrosodiphenylamine	ND		0.32	0.077	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Naphthalene	0.56		0.096	0.015	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Nitrobenzene	ND		0.64	0.083	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Pentachlorophenol	ND		0.96	0.37	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Phenanthrene	0.64		0.096	0.014	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Phenol	ND		0.32	0.051	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
Pyrene	0.14		0.096	0.014	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
3 & 4 Methylphenol	ND		2.6	0.19	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5
2-Butoxyethanol	ND		0.45	0.42	mg/Kg	✳	02/27/23 11:53	03/01/23 19:02	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	32	S1-	46 - 137	02/27/23 11:53	03/01/23 19:02	5
Phenol-d5 (Surr)	28		26 - 120	02/27/23 11:53	03/01/23 19:02	5
Nitrobenzene-d5 (Surr)	29		25 - 120	02/27/23 11:53	03/01/23 19:02	5
2-Fluorophenol (Surr)	26		20 - 120	02/27/23 11:53	03/01/23 19:02	5
2-Fluorobiphenyl (Surr)	30	S1-	34 - 120	02/27/23 11:53	03/01/23 19:02	5
2,4,6-Tribromophenol (Surr)	26		10 - 120	02/27/23 11:53	03/01/23 19:02	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:59	1
Barium	1.0	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:59	1
Cadmium	0.00087	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:59	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:59	1
Lead	0.0052	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:59	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:59	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:59	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 78.4

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.4		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	21.6		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.33	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,1,2,2-Tetrachloroethane	ND		0.33	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.33	0.088	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,1,2-Trichloroethane	ND		0.33	0.075	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,1-Dichloroethane	ND		0.33	0.063	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,1-Dichloroethene	ND		0.33	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,2,4-Trichlorobenzene	ND		0.33	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,2-Dibromo-3-Chloropropane	ND		0.66	0.29	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Ethylene Dibromide	ND		0.33	0.10	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,2-Dichlorobenzene	ND		0.33	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,2-Dichloroethane	ND		0.33	0.062	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,2-Dichloropropane	ND		0.33	0.049	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,3-Dichlorobenzene	ND		0.33	0.060	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
1,4-Dichlorobenzene	ND		0.33	0.072	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
2-Butanone (MEK)	ND		1.3	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
2-Hexanone	ND		1.3	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Acetone	0.67	J	1.3	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Benzene	9.8		0.33	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Dichlorobromomethane	ND		0.33	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Bromoform	ND		0.33	0.30	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Bromomethane	ND		0.33	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Carbon disulfide	ND		0.33	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Carbon tetrachloride	ND		0.33	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Chlorobenzene	ND		0.33	0.046	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Chloroethane	ND		0.33	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Chloroform	ND		0.33	0.071	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Chloromethane	0.26	J	0.33	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
cis-1,2-Dichloroethene	ND		0.33	0.052	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
cis-1,3-Dichloropropene	ND		0.33	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Cyclohexane	0.33	J	0.66	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Chlorodibromomethane	ND		0.33	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Dichlorodifluoromethane	ND		0.33	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Ethylbenzene	0.074	J	0.33	0.062	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Isopropylbenzene	0.052	J	0.33	0.050	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Methyl acetate	0.65	J	1.6	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Methyl tert-butyl ether	ND		0.33	0.049	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Methylcyclohexane	0.97		0.66	0.087	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Methylene Chloride	ND		0.66	0.50	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Styrene	ND		0.33	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Tetrachloroethene	ND		0.33	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Toluene	0.50		0.33	0.31	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
trans-1,2-Dichloroethene	ND		0.33	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
trans-1,3-Dichloropropene	ND		0.33	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Trichloroethene	ND		0.33	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Trichlorofluoromethane	ND		0.33	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Vinyl chloride	ND		0.33	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Xylenes, Total	0.73		0.66	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1
Butyl acrylate	6.2		3.3	1.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:15	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.66	0.15	mg/Kg	☼	02/27/23 17:21	02/28/23 21:15	1
2-Ethylhexyl acrylate	ND		3.3	2.4	mg/Kg	☼	02/27/23 17:21	02/28/23 21:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125				02/27/23 17:21	02/28/23 21:15	1
Dibromofluoromethane (Surr)	74		41 - 138				02/27/23 17:21	02/28/23 21:15	1
4-Bromofluorobenzene (Surr)	71		41 - 143				02/27/23 17:21	02/28/23 21:15	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				02/27/23 17:21	02/28/23 21:15	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.089	J	0.15	0.050	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
bis (2-chloroisopropyl) ether	ND		0.29	0.029	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4,5-Trichlorophenol	ND		0.44	0.20	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4,6-Trichlorophenol	ND		0.44	0.19	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4-Dichlorophenol	ND		0.44	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4-Dimethylphenol	ND		0.44	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4-Dinitrophenol	ND		0.96	0.41	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,4-Dinitrotoluene	ND		0.58	0.18	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2,6-Dinitrotoluene	ND		0.58	0.16	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Chloronaphthalene	ND		0.15	0.041	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Chlorophenol	ND		0.15	0.029	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Methylnaphthalene	0.26		0.044	0.0057	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Methylphenol	ND		0.58	0.090	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Nitroaniline	ND		0.58	0.12	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
2-Nitrophenol	ND		0.15	0.038	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
3,3'-Dichlorobenzidine	ND		0.29	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
3-Nitroaniline	ND		0.58	0.14	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4,6-Dinitro-2-methylphenol	ND		0.96	0.23	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Bromophenyl phenyl ether	ND		0.15	0.041	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Chloro-3-methylphenol	ND		0.44	0.13	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Chloroaniline	ND		0.44	0.088	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Chlorophenyl phenyl ether	ND		0.15	0.041	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Nitroaniline	ND		0.58	0.18	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
4-Nitrophenol	ND		0.96	0.27	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Acenaphthene	ND		0.044	0.0083	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Acenaphthylene	0.016	J	0.044	0.012	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Acetophenone	0.89		0.29	0.032	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Anthracene	0.053		0.044	0.0070	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Atrazine	ND		0.58	0.11	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzaldehyde	ND		0.29	0.067	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzo[a]anthracene	0.048		0.044	0.0099	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzo[a]pyrene	ND		0.044	0.027	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzo[b]fluoranthene	ND		0.044	0.019	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzo[g,h,i]perylene	ND		0.044	0.021	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Benzo[k]fluoranthene	ND		0.044	0.020	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Bis(2-chloroethoxy)methane	ND		0.29	0.035	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Bis(2-chloroethyl)ether	ND		0.29	0.035	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Bis(2-ethylhexyl) phthalate	ND		0.20	0.15	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5
Butyl benzyl phthalate	ND		0.20	0.064	mg/Kg	☼	02/27/23 11:53	03/01/23 18:14	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.96	0.22	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Carbazole	ND		0.15	0.055	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Chrysene	0.083		0.044	0.0043	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Dibenz(a,h)anthracene	ND		0.044	0.020	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Dibenzofuran	0.13	J	0.15	0.038	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Diethyl phthalate	ND		0.20	0.090	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Dimethyl phthalate	ND		0.20	0.041	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Di-n-butyl phthalate	ND		0.20	0.15	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Di-n-octyl phthalate	ND		0.20	0.082	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Fluoranthene	0.084		0.044	0.013	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Fluorene	ND		0.044	0.0080	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Hexachlorobenzene	ND		0.044	0.0083	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Hexachlorobutadiene	ND		0.15	0.035	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Hexachlorocyclopentadiene	ND		0.96	0.18	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Hexachloroethane	ND		0.15	0.026	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Indeno[1,2,3-cd]pyrene	ND		0.044	0.021	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Isophorone	ND		0.15	0.035	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
N-Nitrosodi-n-propylamine	ND		0.15	0.032	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
N-Nitrosodiphenylamine	ND		0.15	0.035	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Naphthalene	0.39		0.044	0.0070	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Nitrobenzene	ND		0.29	0.038	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Pentachlorophenol	ND		0.44	0.17	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Phenanthrene	0.37		0.044	0.0065	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Phenol	0.20		0.15	0.023	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
Pyrene	0.073		0.044	0.0062	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
3 & 4 Methylphenol	ND		1.2	0.085	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5
2-Butoxyethanol	ND		0.20	0.19	mg/Kg	✳	02/27/23 11:53	03/01/23 18:14	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	20	S1-	46 - 137	02/27/23 11:53	03/01/23 18:14	2.5
Phenol-d5 (Surr)	23	S1-	26 - 120	02/27/23 11:53	03/01/23 18:14	2.5
Nitrobenzene-d5 (Surr)	20	S1-	25 - 120	02/27/23 11:53	03/01/23 18:14	2.5
2-Fluorophenol (Surr)	18	S1-	20 - 120	02/27/23 11:53	03/01/23 18:14	2.5
2-Fluorobiphenyl (Surr)	19	S1-	34 - 120	02/27/23 11:53	03/01/23 18:14	2.5
2,4,6-Tribromophenol (Surr)	19		10 - 120	02/27/23 11:53	03/01/23 18:14	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0052	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 08:03	1
Barium	0.98	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 08:03	1
Cadmium	0.0035	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 08:03	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 08:03	1
Lead	0.0076	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 08:03	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 08:03	1
Silver	0.00083	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 08:03	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:42	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.0	0.94	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,1,2,2-Tetrachloroethane	ND		3.0	1.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.0	0.81	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,1,2-Trichloroethane	ND		3.0	0.69	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,1-Dichloroethane	ND		3.0	0.58	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,1-Dichloroethene	ND		3.0	0.99	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,2,4-Trichlorobenzene	ND		3.0	1.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,2-Dibromo-3-Chloropropane	ND		6.0	2.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Ethylene Dibromide	ND		3.0	0.95	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,2-Dichlorobenzene	ND		3.0	1.4	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,2-Dichloroethane	ND		3.0	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,2-Dichloropropane	ND		3.0	0.45	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,3-Dichlorobenzene	ND		3.0	0.55	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
1,4-Dichlorobenzene	ND		3.0	0.66	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
2-Butanone (MEK)	ND		12	1.9	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
2-Hexanone	ND		12	3.2	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
4-Methyl-2-pentanone (MIBK)	ND		12	2.9	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Acetone	3.1	J	12	2.9	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Benzene	0.94	J	3.0	0.51	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Dichlorobromomethane	ND		3.0	0.73	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Bromoform	ND		3.0	2.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Bromomethane	ND		3.0	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Carbon disulfide	ND		3.0	1.3	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Carbon tetrachloride	ND		3.0	1.2	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Chlorobenzene	ND		3.0	0.42	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Chloroethane	ND		3.0	1.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Chloroform	ND		3.0	0.65	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Chloromethane	ND		3.0	0.80	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
cis-1,2-Dichloroethene	ND		3.0	0.48	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
cis-1,3-Dichloropropene	ND		3.0	1.5	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Cyclohexane	ND		6.0	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Chlorodibromomethane	ND		3.0	1.4	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Dichlorodifluoromethane	ND		3.0	0.64	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Ethylbenzene	0.68	J	3.0	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Isopropylbenzene	0.80	J	3.0	0.46	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Methyl acetate	ND		15	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Methyl tert-butyl ether	ND		3.0	0.45	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Methylcyclohexane	ND		6.0	0.80	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Methylene Chloride	ND		6.0	4.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Styrene	ND		3.0	0.63	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Tetrachloroethene	ND		3.0	1.2	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Toluene	ND		3.0	2.9	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
trans-1,2-Dichloroethene	ND		3.0	0.75	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
trans-1,3-Dichloropropene	ND		3.0	1.3	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Trichloroethene	ND		3.0	1.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Trichlorofluoromethane	ND		3.0	1.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Vinyl chloride	ND		0.30	0.15	mg/Kg	✱	02/27/23 17:21	03/02/23 01:20	1
Xylenes, Total	22		6.0	1.1	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10
Butyl acrylate	60		30	16	mg/Kg	✱	02/27/23 17:21	02/28/23 21:36	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		6.0	1.4	mg/Kg	☼	02/27/23 17:21	02/28/23 21:36	10
2-Ethylhexyl acrylate	ND		30	22	mg/Kg	☼	02/27/23 17:21	02/28/23 21:36	10

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125				02/27/23 17:21	02/28/23 21:36	10
Toluene-d8 (Surr)	110		56 - 125				02/27/23 17:21	03/02/23 01:20	1
Dibromofluoromethane (Surr)	79		41 - 138				02/27/23 17:21	02/28/23 21:36	10
Dibromofluoromethane (Surr)	94		41 - 138				02/27/23 17:21	03/02/23 01:20	1
4-Bromofluorobenzene (Surr)	73		41 - 143				02/27/23 17:21	02/28/23 21:36	10
4-Bromofluorobenzene (Surr)	104		41 - 143				02/27/23 17:21	03/02/23 01:20	1
1,2-Dichloroethane-d4 (Surr)	77		58 - 125				02/27/23 17:21	02/28/23 21:36	10
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				02/27/23 17:21	03/02/23 01:20	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.66	0.22	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
bis (2-chloroisopropyl) ether	ND		1.3	0.13	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4,5-Trichlorophenol	ND		2.0	0.91	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4,6-Trichlorophenol	ND		2.0	0.85	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4-Dichlorophenol	ND		2.0	0.58	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4-Dimethylphenol	ND		2.0	0.53	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4-Dinitrophenol	ND		4.4	1.9	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,4-Dinitrotoluene	ND		2.6	0.82	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2,6-Dinitrotoluene	ND		2.6	0.74	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Chloronaphthalene	ND		0.66	0.19	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Chlorophenol	ND		0.66	0.13	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Methylnaphthalene	1.2		0.20	0.026	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Methylphenol	ND		2.6	0.41	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Nitroaniline	ND		2.6	0.53	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
2-Nitrophenol	ND		0.66	0.17	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
3,3'-Dichlorobenzidine	ND		1.3	0.57	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
3-Nitroaniline	ND		2.6	0.65	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4,6-Dinitro-2-methylphenol	ND		4.4	1.1	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Bromophenyl phenyl ether	ND		0.66	0.19	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Chloro-3-methylphenol	ND		2.0	0.60	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Chloroaniline	ND		2.0	0.40	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Chlorophenyl phenyl ether	ND		0.66	0.19	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Nitroaniline	ND		2.6	0.79	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
4-Nitrophenol	ND		4.4	1.2	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Acenaphthene	ND		0.20	0.038	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Acenaphthylene	0.055	J	0.20	0.053	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Acetophenone	0.37	J	1.3	0.15	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Anthracene	0.058	J	0.20	0.032	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Atrazine	ND		2.6	0.48	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzaldehyde	ND		1.3	0.30	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzo[a]anthracene	0.22		0.20	0.045	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzo[a]pyrene	0.20		0.20	0.12	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzo[b]fluoranthene	0.29		0.20	0.086	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzo[g,h,i]perylene	0.17	J	0.20	0.094	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10
Benzo[k]fluoranthene	ND		0.20	0.092	mg/Kg	☼	02/27/23 11:53	03/03/23 12:59	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		1.3	0.16	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Bis(2-chloroethyl)ether	ND		1.3	0.16	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Bis(2-ethylhexyl) phthalate	ND		0.93	0.67	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Butyl benzyl phthalate	ND		0.93	0.29	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Caprolactam	ND		4.4	0.99	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Carbazole	ND		0.66	0.25	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Chrysene	0.33		0.20	0.020	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Dibenz(a,h)anthracene	ND		0.20	0.092	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Dibenzofuran	0.64	J	0.66	0.17	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Diethyl phthalate	ND		0.93	0.41	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Dimethyl phthalate	ND		0.93	0.19	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Di-n-butyl phthalate	ND		0.93	0.67	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Di-n-octyl phthalate	ND		0.93	0.37	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Fluoranthene	0.37		0.20	0.059	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Fluorene	ND		0.20	0.036	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Hexachlorobenzene	ND		0.20	0.038	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Hexachlorobutadiene	ND		0.66	0.16	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Hexachlorocyclopentadiene	ND		4.4	0.82	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Hexachloroethane	ND		0.66	0.12	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Indeno[1,2,3-cd]pyrene	ND		0.20	0.097	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Isophorone	ND		0.66	0.16	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
N-Nitrosodi-n-propylamine	ND		0.66	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
N-Nitrosodiphenylamine	ND		0.66	0.16	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Naphthalene	1.1		0.20	0.032	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Nitrobenzene	ND		1.3	0.17	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Pentachlorophenol	ND		2.0	0.77	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Phenanthrene	1.2		0.20	0.030	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Phenol	ND		0.66	0.11	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
Pyrene	0.38		0.20	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
3 & 4 Methylphenol	ND		5.3	0.38	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10
2-Butoxyethanol	ND		0.93	0.87	mg/Kg	✳	02/27/23 11:53	03/03/23 12:59	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	77		46 - 137	02/27/23 11:53	03/03/23 12:59	10
Phenol-d5 (Surr)	72		26 - 120	02/27/23 11:53	03/03/23 12:59	10
Nitrobenzene-d5 (Surr)	69		25 - 120	02/27/23 11:53	03/03/23 12:59	10
2-Fluorophenol (Surr)	75		20 - 120	02/27/23 11:53	03/03/23 12:59	10
2-Fluorobiphenyl (Surr)	72		34 - 120	02/27/23 11:53	03/03/23 12:59	10
2,4,6-Tribromophenol (Surr)	76		10 - 120	02/27/23 11:53	03/03/23 12:59	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0060	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 08:08	1
Barium	1.6	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 08:08	1
Cadmium	0.0048	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 08:08	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 08:08	1
Lead	0.044	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 08:08	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 08:08	1
Silver	0.0011	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 08:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.8

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.8		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	23.2		0.1	0.1	%			02/27/23 13:12	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 86.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.7	0.83	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,1,2,2-Tetrachloroethane	ND		2.7	1.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.7	0.72	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,1,2-Trichloroethane	ND		2.7	0.61	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,1-Dichloroethane	ND		2.7	0.51	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,1-Dichloroethene	ND		2.7	0.88	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,2,4-Trichlorobenzene	ND		2.7	1.4	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,2-Dibromo-3-Chloropropane	ND		5.3	2.4	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Ethylene Dibromide	ND		2.7	0.84	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,2-Dichlorobenzene	ND		2.7	1.3	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,2-Dichloroethane	ND		2.7	0.50	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,2-Dichloropropane	ND		2.7	0.40	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,3-Dichlorobenzene	ND		2.7	0.49	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
1,4-Dichlorobenzene	ND		2.7	0.59	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
2-Butanone (MEK)	ND		11	1.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
2-Hexanone	ND		11	2.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
4-Methyl-2-pentanone (MIBK)	ND		11	2.5	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Acetone	ND		11	2.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Benzene	1.1	J	2.7	0.45	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Dichlorobromomethane	ND		2.7	0.65	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Bromoform	ND		2.7	2.4	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Bromomethane	ND		2.7	1.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Carbon disulfide	ND		2.7	1.2	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Carbon tetrachloride	ND		2.7	1.1	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Chlorobenzene	ND		2.7	0.37	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Chloroethane	ND		2.7	1.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Chloroform	ND		2.7	0.58	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Chloromethane	ND		2.7	0.71	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
cis-1,2-Dichloroethene	ND		2.7	0.43	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
cis-1,3-Dichloropropene	ND		2.7	1.3	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Cyclohexane	ND		5.3	1.7	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Chlorodibromomethane	ND		2.7	1.3	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Dichlorodifluoromethane	ND		2.7	0.57	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Ethylbenzene	ND		2.7	0.50	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Isopropylbenzene	ND		2.7	0.41	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Methyl acetate	ND		13	1.8	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Methyl tert-butyl ether	ND		2.7	0.40	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Methylcyclohexane	ND		5.3	0.71	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Methylene Chloride	ND		5.3	4.1	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Styrene	ND		2.7	0.56	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Tetrachloroethene	ND		2.7	1.0	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Toluene	ND		2.7	2.6	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
trans-1,2-Dichloroethene	ND		2.7	0.66	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
trans-1,3-Dichloropropene	ND		2.7	1.1	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Trichloroethene	ND		2.7	1.5	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Trichlorofluoromethane	ND		2.7	1.5	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Vinyl chloride	ND		0.27	0.13	mg/Kg	✱	02/27/23 17:21	03/02/23 01:43	1
Xylenes, Total	ND		5.3	0.97	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10
Butyl acrylate	49		27	14	mg/Kg	✱	02/27/23 17:21	02/28/23 21:57	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 86.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		5.3	1.3	mg/Kg	☼	02/27/23 17:21	02/28/23 21:57	10
2-Ethylhexyl acrylate	ND		27	20	mg/Kg	☼	02/27/23 17:21	02/28/23 21:57	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125	02/27/23 17:21	02/28/23 21:57	10
Toluene-d8 (Surr)	103		56 - 125	02/27/23 17:21	03/02/23 01:43	1
Dibromofluoromethane (Surr)	81		41 - 138	02/27/23 17:21	02/28/23 21:57	10
Dibromofluoromethane (Surr)	93		41 - 138	02/27/23 17:21	03/02/23 01:43	1
4-Bromofluorobenzene (Surr)	71		41 - 143	02/27/23 17:21	02/28/23 21:57	10
4-Bromofluorobenzene (Surr)	108		41 - 143	02/27/23 17:21	03/02/23 01:43	1
1,2-Dichloroethane-d4 (Surr)	77		58 - 125	02/27/23 17:21	02/28/23 21:57	10
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	02/27/23 17:21	03/02/23 01:43	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.083	J	0.12	0.040	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
bis (2-chloroisopropyl) ether	ND		0.24	0.024	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4,5-Trichlorophenol	ND		0.35	0.16	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4,6-Trichlorophenol	ND		0.35	0.15	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4-Dichlorophenol	ND		0.35	0.10	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4-Dimethylphenol	ND		0.35	0.094	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4-Dinitrophenol	ND		0.78	0.33	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,4-Dinitrotoluene	ND		0.47	0.15	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2,6-Dinitrotoluene	ND		0.47	0.13	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Chloronaphthalene	ND		0.12	0.033	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Chlorophenol	ND		0.12	0.024	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Methylnaphthalene	0.28		0.035	0.0046	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Methylphenol	ND		0.47	0.073	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Nitroaniline	ND		0.47	0.094	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
2-Nitrophenol	ND		0.12	0.031	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
3,3'-Dichlorobenzidine	ND		0.24	0.10	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
3-Nitroaniline	ND		0.47	0.12	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4,6-Dinitro-2-methylphenol	ND		0.78	0.19	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Bromophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Chloro-3-methylphenol	ND		0.35	0.11	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Chloroaniline	ND		0.35	0.071	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Chlorophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Nitroaniline	ND		0.47	0.14	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
4-Nitrophenol	ND		0.78	0.22	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Acenaphthene	ND		0.035	0.0067	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Acenaphthylene	ND		0.035	0.0094	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Acetophenone	0.70		0.24	0.026	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Anthracene	0.020	J	0.035	0.0057	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Atrazine	ND		0.47	0.085	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzaldehyde	ND		0.24	0.054	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzo[a]anthracene	0.035		0.035	0.0080	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzo[a]pyrene	ND		0.035	0.022	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzo[b]fluoranthene	0.046		0.035	0.015	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzo[g,h,i]perylene	ND		0.035	0.017	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2
Benzo[k]fluoranthene	ND		0.035	0.016	mg/Kg	☼	02/27/23 11:53	03/03/23 14:13	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 86.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.24	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Bis(2-chloroethyl)ether	ND		0.24	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Bis(2-ethylhexyl) phthalate	ND		0.16	0.12	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Butyl benzyl phthalate	ND		0.16	0.052	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Caprolactam	ND		0.78	0.18	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Carbazole	ND		0.12	0.045	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Chrysene	0.064		0.035	0.0035	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Dibenz(a,h)anthracene	ND		0.035	0.016	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Dibenzofuran	0.15		0.12	0.031	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Diethyl phthalate	ND		0.16	0.073	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Dimethyl phthalate	ND		0.16	0.033	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Di-n-butyl phthalate	ND		0.16	0.12	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Di-n-octyl phthalate	ND		0.16	0.066	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Fluoranthene	0.070		0.035	0.010	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Fluorene	0.026	J	0.035	0.0064	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Hexachlorobenzene	ND		0.035	0.0067	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Hexachlorobutadiene	ND		0.12	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Hexachlorocyclopentadiene	ND		0.78	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Hexachloroethane	ND		0.12	0.021	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Indeno[1,2,3-cd]pyrene	ND		0.035	0.017	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Isophorone	ND		0.12	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
N-Nitrosodi-n-propylamine	ND		0.12	0.026	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
N-Nitrosodiphenylamine	ND		0.12	0.028	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Naphthalene	0.31		0.035	0.0057	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Nitrobenzene	ND		0.24	0.031	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Pentachlorophenol	ND		0.35	0.14	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Phenanthrene	0.26		0.035	0.0052	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Phenol	0.18		0.12	0.019	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
Pyrene	0.056		0.035	0.0050	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
3 & 4 Methylphenol	ND		0.94	0.068	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2
2-Butoxyethanol	ND		0.16	0.15	mg/Kg	✳	02/27/23 11:53	03/03/23 14:13	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	12	S1-	46 - 137	02/27/23 11:53	03/03/23 14:13	2
Phenol-d5 (Surr)	12	S1-	26 - 120	02/27/23 11:53	03/03/23 14:13	2
Nitrobenzene-d5 (Surr)	12	S1-	25 - 120	02/27/23 11:53	03/03/23 14:13	2
2-Fluorophenol (Surr)	13	S1-	20 - 120	02/27/23 11:53	03/03/23 14:13	2
2-Fluorobiphenyl (Surr)	13	S1-	34 - 120	02/27/23 11:53	03/03/23 14:13	2
2,4,6-Tribromophenol (Surr)	13		10 - 120	02/27/23 11:53	03/03/23 14:13	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 08:12	1
Barium	1.1	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 08:12	1
Cadmium	0.0014	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 08:12	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 08:12	1
Lead	0.0076	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 08:12	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 08:12	1
Silver	0.00085	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 08:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 86.3

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.3		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	13.7		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 75.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.37	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,1,2,2-Tetrachloroethane	ND		0.37	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.37	0.099	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,1,2-Trichloroethane	ND		0.37	0.084	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,1-Dichloroethane	ND		0.37	0.071	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,1-Dichloroethene	ND		0.37	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,2,4-Trichlorobenzene	ND		0.37	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,2-Dibromo-3-Chloropropane	ND		0.74	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Ethylene Dibromide	ND		0.37	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,2-Dichlorobenzene	ND		0.37	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,2-Dichloroethane	ND		0.37	0.069	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,2-Dichloropropane	ND		0.37	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,3-Dichlorobenzene	ND		0.37	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
1,4-Dichlorobenzene	ND		0.37	0.081	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
2-Hexanone	ND		1.5	0.39	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Acetone	0.66	J	1.5	0.36	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Benzene	3.6		0.37	0.062	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Dichlorobromomethane	ND		0.37	0.090	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Bromoform	ND		0.37	0.34	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Bromomethane	ND		0.37	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Carbon disulfide	ND		0.37	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Carbon tetrachloride	ND		0.37	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Chlorobenzene	ND		0.37	0.052	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Chloroethane	ND		0.37	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Chloroform	ND		0.37	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Chloromethane	ND		0.37	0.097	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
cis-1,2-Dichloroethene	ND		0.37	0.059	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
cis-1,3-Dichloropropene	ND		0.37	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Cyclohexane	ND		0.74	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Chlorodibromomethane	ND		0.37	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Dichlorodifluoromethane	ND		0.37	0.078	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Ethylbenzene	ND		0.37	0.069	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Isopropylbenzene	0.64		0.37	0.056	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Methyl acetate	2.1		1.8	0.25	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Methyl tert-butyl ether	ND		0.37	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Methylcyclohexane	0.22	J	0.74	0.097	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Methylene Chloride	ND		0.74	0.56	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Styrene	ND		0.37	0.077	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Tetrachloroethene	ND		0.37	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Toluene	ND		0.37	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
trans-1,2-Dichloroethene	ND		0.37	0.091	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
trans-1,3-Dichloropropene	ND		0.37	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Trichloroethene	ND		0.37	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Trichlorofluoromethane	ND		0.37	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Vinyl chloride	ND		0.37	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Xylenes, Total	0.19	J	0.74	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1
Butyl acrylate	2.0	J	3.7	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 22:19	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 75.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.74	0.17	mg/Kg	☼	02/27/23 17:21	02/28/23 22:19	1
2-Ethylhexyl acrylate	ND		3.7	2.7	mg/Kg	☼	02/27/23 17:21	02/28/23 22:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	81		56 - 125				02/27/23 17:21	02/28/23 22:19	1
Dibromofluoromethane (Surr)	76		41 - 138				02/27/23 17:21	02/28/23 22:19	1
4-Bromofluorobenzene (Surr)	75		41 - 143				02/27/23 17:21	02/28/23 22:19	1
1,2-Dichloroethane-d4 (Surr)	74		58 - 125				02/27/23 17:21	02/28/23 22:19	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.33	0.11	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
bis (2-chloroisopropyl) ether	ND		0.65	0.065	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4,5-Trichlorophenol	ND		0.98	0.45	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4,6-Trichlorophenol	ND		0.98	0.42	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4-Dichlorophenol	ND		0.98	0.29	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4-Dimethylphenol	ND		0.98	0.26	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4-Dinitrophenol	ND		2.2	0.93	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,4-Dinitrotoluene	ND		1.3	0.41	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2,6-Dinitrotoluene	ND		1.3	0.37	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Chloronaphthalene	ND		0.33	0.091	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Chlorophenol	ND		0.33	0.065	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Methylnaphthalene	0.18		0.098	0.013	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Methylphenol	ND		1.3	0.20	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Nitroaniline	ND		1.3	0.26	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
2-Nitrophenol	ND		0.33	0.085	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
3,3'-Dichlorobenzidine	ND		0.65	0.28	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
3-Nitroaniline	ND		1.3	0.32	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4,6-Dinitro-2-methylphenol	ND		2.2	0.52	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Bromophenyl phenyl ether	ND		0.33	0.091	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Chloro-3-methylphenol	ND		0.98	0.29	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Chloroaniline	ND		0.98	0.20	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Chlorophenyl phenyl ether	ND		0.33	0.091	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Nitroaniline	ND		1.3	0.39	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
4-Nitrophenol	ND		2.2	0.61	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Acenaphthene	ND		0.098	0.019	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Acenaphthylene	ND		0.098	0.026	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Acetophenone	0.38	J	0.65	0.072	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Anthracene	0.049	J	0.098	0.016	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Atrazine	ND		1.3	0.24	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzaldehyde	ND		0.65	0.15	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzo[a]anthracene	0.075	J	0.098	0.022	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzo[a]pyrene	ND		0.098	0.061	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzo[b]fluoranthene	ND		0.098	0.042	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzo[g,h,i]perylene	ND		0.098	0.046	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Benzo[k]fluoranthene	ND		0.098	0.045	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Bis(2-chloroethoxy)methane	ND		0.65	0.078	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Bis(2-chloroethyl)ether	ND		0.65	0.078	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Bis(2-ethylhexyl) phthalate	ND		0.46	0.33	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5
Butyl benzyl phthalate	ND		0.46	0.14	mg/Kg	☼	02/27/23 11:53	03/02/23 20:47	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 75.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.2	0.49	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Carbazole	ND		0.33	0.12	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Chrysene	0.10		0.098	0.0097	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Dibenz(a,h)anthracene	ND		0.098	0.045	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Dibenzofuran	0.11	J	0.33	0.085	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Diethyl phthalate	ND		0.46	0.20	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Dimethyl phthalate	ND		0.46	0.091	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Di-n-butyl phthalate	ND		0.46	0.33	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Di-n-octyl phthalate	ND		0.46	0.18	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Fluoranthene	0.14		0.098	0.029	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Fluorene	0.042	J	0.098	0.018	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Hexachlorobenzene	ND		0.098	0.019	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Hexachlorobutadiene	ND		0.33	0.078	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Hexachlorocyclopentadiene	ND		2.2	0.41	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Hexachloroethane	ND		0.33	0.059	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Indeno[1,2,3-cd]pyrene	ND		0.098	0.048	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Isophorone	ND		0.33	0.078	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
N-Nitrosodi-n-propylamine	ND		0.33	0.072	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
N-Nitrosodiphenylamine	ND		0.33	0.078	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Naphthalene	0.17		0.098	0.016	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Nitrobenzene	ND		0.65	0.085	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Pentachlorophenol	ND		0.98	0.38	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Phenanthrene	0.26		0.098	0.015	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Phenol	0.096	J	0.33	0.052	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
Pyrene	0.12		0.098	0.014	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
3 & 4 Methylphenol	ND		2.6	0.19	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5
2-Butoxyethanol	0.44	J	0.46	0.43	mg/Kg	✳	02/27/23 11:53	03/02/23 20:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	18	S1-	46 - 137	02/27/23 11:53	03/02/23 20:47	5
Phenol-d5 (Surr)	17	S1-	26 - 120	02/27/23 11:53	03/02/23 20:47	5
Nitrobenzene-d5 (Surr)	18	S1-	25 - 120	02/27/23 11:53	03/02/23 20:47	5
2-Fluorophenol (Surr)	14	S1-	20 - 120	02/27/23 11:53	03/02/23 20:47	5
2-Fluorobiphenyl (Surr)	17	S1-	34 - 120	02/27/23 11:53	03/02/23 20:47	5
2,4,6-Tribromophenol (Surr)	22		10 - 120	02/27/23 11:53	03/02/23 20:47	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0041	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 08:17	1
Barium	0.68	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 08:17	1
Cadmium	0.010	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 08:17	1
Chromium	0.0043	J	0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 08:17	1
Lead	0.016	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 08:17	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 08:17	1
Silver	0.0014	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 08:17	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 75.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	75.9		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	24.1		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 80.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.36	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,1,2,2-Tetrachloroethane	ND		0.36	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.36	0.097	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,1,2-Trichloroethane	ND		0.36	0.083	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,1-Dichloroethane	ND		0.36	0.070	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,1-Dichloroethene	ND		0.36	0.12	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,2,4-Trichlorobenzene	ND		0.36	0.19	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,2-Dibromo-3-Chloropropane	ND		0.73	0.32	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Ethylene Dibromide	ND		0.36	0.11	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,2-Dichlorobenzene	ND		0.36	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,2-Dichloroethane	ND		0.36	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,2-Dichloropropane	ND		0.36	0.054	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,3-Dichlorobenzene	ND		0.36	0.067	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
1,4-Dichlorobenzene	ND		0.36	0.080	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
2-Hexanone	ND		1.5	0.38	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Acetone	0.59	J	1.5	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Benzene	7.9		0.36	0.061	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Dichlorobromomethane	ND		0.36	0.088	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Bromoform	ND		0.36	0.33	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Bromomethane	ND		0.36	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Carbon disulfide	ND		0.36	0.16	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Carbon tetrachloride	ND		0.36	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Chlorobenzene	ND		0.36	0.051	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Chloroethane	ND		0.36	0.22	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Chloroform	ND		0.36	0.078	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Chloromethane	0.31	J	0.36	0.096	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
cis-1,2-Dichloroethene	ND		0.36	0.058	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
cis-1,3-Dichloropropene	ND		0.36	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Cyclohexane	0.41	J	0.73	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Chlorodibromomethane	ND		0.36	0.17	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Dichlorodifluoromethane	ND		0.36	0.077	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Ethylbenzene	ND		0.36	0.068	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Isopropylbenzene	ND		0.36	0.055	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Methyl acetate	0.37	J	1.8	0.24	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Methyl tert-butyl ether	ND		0.36	0.054	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Methylcyclohexane	1.2		0.73	0.096	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Methylene Chloride	ND		0.73	0.56	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Styrene	ND		0.36	0.075	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Tetrachloroethene	ND		0.36	0.14	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Toluene	ND		0.36	0.35	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
trans-1,2-Dichloroethene	ND		0.36	0.090	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
trans-1,3-Dichloropropene	ND		0.36	0.15	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Trichloroethene	ND		0.36	0.21	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Trichlorofluoromethane	ND		0.36	0.20	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Vinyl chloride	ND		0.36	0.18	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Xylenes, Total	0.59	J	0.73	0.13	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1
Butyl acrylate	3.5	J	3.6	2.0	mg/Kg	✱	02/27/23 17:21	02/28/23 22:40	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 80.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.73	0.17	mg/Kg	☼	02/27/23 17:21	02/28/23 22:40	1
2-Ethylhexyl acrylate	ND		3.6	2.7	mg/Kg	☼	02/27/23 17:21	02/28/23 22:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125				02/27/23 17:21	02/28/23 22:40	1
Dibromofluoromethane (Surr)	75		41 - 138				02/27/23 17:21	02/28/23 22:40	1
4-Bromofluorobenzene (Surr)	71		41 - 143				02/27/23 17:21	02/28/23 22:40	1
1,2-Dichloroethane-d4 (Surr)	73		58 - 125				02/27/23 17:21	02/28/23 22:40	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.31	0.11	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
bis (2-chloroisopropyl) ether	ND		0.63	0.063	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4,5-Trichlorophenol	ND		0.94	0.43	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4,6-Trichlorophenol	ND		0.94	0.40	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4-Dichlorophenol	ND		0.94	0.28	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4-Dimethylphenol	ND		0.94	0.25	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4-Dinitrophenol	ND		2.1	0.89	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,4-Dinitrotoluene	ND		1.3	0.39	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2,6-Dinitrotoluene	ND		1.3	0.35	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Chloronaphthalene	ND		0.31	0.088	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Chlorophenol	ND		0.31	0.063	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Methylnaphthalene	0.27		0.094	0.012	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Methylphenol	ND		1.3	0.19	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Nitroaniline	ND		1.3	0.25	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
2-Nitrophenol	ND		0.31	0.081	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
3,3'-Dichlorobenzidine	ND		0.63	0.27	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
3-Nitroaniline	ND		1.3	0.31	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4,6-Dinitro-2-methylphenol	ND		2.1	0.50	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Bromophenyl phenyl ether	ND		0.31	0.088	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Chloro-3-methylphenol	ND		0.94	0.28	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Chloroaniline	ND		0.94	0.19	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Chlorophenyl phenyl ether	ND		0.31	0.088	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Nitroaniline	ND		1.3	0.38	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
4-Nitrophenol	ND		2.1	0.59	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Acenaphthene	ND		0.094	0.018	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Acenaphthylene	ND		0.094	0.025	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Acetophenone	0.50	J	0.63	0.069	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Anthracene	ND		0.094	0.015	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Atrazine	ND		1.3	0.23	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzaldehyde	ND		0.63	0.14	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzo[a]anthracene	ND		0.094	0.021	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzo[a]pyrene	ND		0.094	0.059	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzo[b]fluoranthene	0.059	J	0.094	0.041	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzo[g,h,i]perylene	ND		0.094	0.044	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Benzo[k]fluoranthene	ND		0.094	0.043	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Bis(2-chloroethoxy)methane	ND		0.63	0.075	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Bis(2-chloroethyl)ether	ND		0.63	0.075	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Bis(2-ethylhexyl) phthalate	1.2		0.44	0.32	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5
Butyl benzyl phthalate	ND		0.44	0.14	mg/Kg	☼	02/27/23 11:53	03/02/23 21:11	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 80.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.1	0.47	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Carbazole	ND		0.31	0.12	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Chrysene	0.080	J	0.094	0.0093	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Dibenz(a,h)anthracene	ND		0.094	0.043	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Dibenzofuran	0.14	J	0.31	0.081	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Diethyl phthalate	ND		0.44	0.19	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Dimethyl phthalate	ND		0.44	0.088	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Di-n-butyl phthalate	ND		0.44	0.32	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Di-n-octyl phthalate	ND		0.44	0.18	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Fluoranthene	0.087	J	0.094	0.028	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Fluorene	0.035	J	0.094	0.017	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Hexachlorobenzene	ND		0.094	0.018	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Hexachlorobutadiene	ND		0.31	0.075	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Hexachlorocyclopentadiene	ND		2.1	0.39	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Hexachloroethane	ND		0.31	0.056	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Indeno[1,2,3-cd]pyrene	ND		0.094	0.046	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Isophorone	ND		0.31	0.075	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
N-Nitrosodi-n-propylamine	ND		0.31	0.069	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
N-Nitrosodiphenylamine	ND		0.31	0.075	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Naphthalene	0.30		0.094	0.015	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Nitrobenzene	ND		0.63	0.081	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Pentachlorophenol	ND		0.94	0.36	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Phenanthrene	0.28		0.094	0.014	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Phenol	0.11	J	0.31	0.050	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
Pyrene	0.080	J	0.094	0.013	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
3 & 4 Methylphenol	ND		2.5	0.18	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5
2-Butoxyethanol	0.44		0.44	0.41	mg/Kg	✳	02/27/23 11:53	03/02/23 21:11	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	14	S1-	46 - 137	02/27/23 11:53	03/02/23 21:11	5
Phenol-d5 (Surr)	14	S1-	26 - 120	02/27/23 11:53	03/02/23 21:11	5
Nitrobenzene-d5 (Surr)	13	S1-	25 - 120	02/27/23 11:53	03/02/23 21:11	5
2-Fluorophenol (Surr)	17	S1-	20 - 120	02/27/23 11:53	03/02/23 21:11	5
2-Fluorobiphenyl (Surr)	14	S1-	34 - 120	02/27/23 11:53	03/02/23 21:11	5
2,4,6-Tribromophenol (Surr)	14		10 - 120	02/27/23 11:53	03/02/23 21:11	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 08:22	1
Barium	1.0	B	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 08:22	1
Cadmium	0.0051	J B	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 08:22	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 08:22	1
Lead	0.012	J	0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 08:22	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 08:22	1
Silver	0.00087	J	0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 08:22	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 80.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.0		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	20.0		0.1	0.1	%			02/27/23 13:12	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/27/23 13:38	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/27/23 13:38	1
2-Butanone (MEK)	0.023	J B	0.25	0.0012	mg/L			02/27/23 13:38	1
Benzene	0.096		0.025	0.00042	mg/L			02/27/23 13:38	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/27/23 13:38	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/27/23 13:38	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/27/23 13:38	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/27/23 13:38	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/27/23 13:38	1
Chloroform	ND		0.025	0.00047	mg/L			02/27/23 13:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		80 - 120					02/27/23 13:38	1
<i>Dibromofluoromethane (Surr)</i>	107		71 - 121					02/27/23 13:38	1
<i>4-Bromofluorobenzene (Surr)</i>	84		80 - 120					02/27/23 13:38	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		76 - 120					02/27/23 13:38	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:25	03/02/23 13:12	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:25	03/02/23 13:12	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:25	03/02/23 13:12	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:25	03/02/23 13:12	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:25	03/02/23 13:12	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:25	03/02/23 13:12	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:25	03/02/23 13:12	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:25	03/02/23 13:12	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:25	03/02/23 13:12	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:25	03/02/23 13:12	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:25	03/02/23 13:12	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:25	03/02/23 13:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	112		46 - 137				02/28/23 07:25	03/02/23 13:12	1
<i>Phenol-d5 (Surr)</i>	68		26 - 120				02/28/23 07:25	03/02/23 13:12	1
<i>Nitrobenzene-d5 (Surr)</i>	84		24 - 120				02/28/23 07:25	03/02/23 13:12	1
<i>2-Fluorophenol (Surr)</i>	74		19 - 120				02/28/23 07:25	03/02/23 13:12	1
<i>2-Fluorobiphenyl (Surr)</i>	98		33 - 120				02/28/23 07:25	03/02/23 13:12	1
<i>2,4,6-Tribromophenol (Surr)</i>	88		10 - 120				02/28/23 07:25	03/02/23 13:12	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/28/23 07:30	02/28/23 14:14	1
Endrin	ND		0.00050	0.0000065	mg/L		02/28/23 07:30	02/28/23 14:14	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/28/23 07:30	02/28/23 14:14	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/28/23 07:30	02/28/23 14:14	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/28/23 07:30	02/28/23 14:14	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/28/23 07:30	02/28/23 14:14	1
Toxaphene	ND		0.020	0.000058	mg/L		02/28/23 07:30	02/28/23 14:14	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	68		10 - 145	02/28/23 07:30	02/28/23 14:14	1
DCB Decachlorobiphenyl	72		10 - 145	02/28/23 07:30	02/28/23 14:14	1
Tetrachloro-m-xylene	61		10 - 123	02/28/23 07:30	02/28/23 14:14	1
Tetrachloro-m-xylene	70		10 - 123	02/28/23 07:30	02/28/23 14:14	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/01/23 19:30	03/02/23 07:04	1
2,4-D	ND		0.050	0.016	mg/L		03/01/23 19:30	03/02/23 07:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	54		26 - 136	03/01/23 19:30	03/02/23 07:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability Screen (SW846 1030)	Negative				NONE			03/02/23 13:36	1
Percent Solids (EPA Moisture)	73.7		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	26.3		0.1	0.1	%			02/27/23 13:12	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 73.7

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		69	34	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1221	ND		69	41	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1232	ND		69	29	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1242	ND		69	26	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1248	ND		69	23	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1254	ND		69	29	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1260	ND		69	29	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1262	ND		69	30	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1
Aroclor-1268	410		69	22	ug/Kg	☼	02/27/23 12:32	02/28/23 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	54		10 - 149	02/27/23 12:32	02/28/23 19:16	1
DCB Decachlorobiphenyl	95	p	10 - 174	02/27/23 12:32	02/28/23 19:16	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/27/23 14:01	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/27/23 14:01	1
2-Butanone (MEK)	0.016	J B	0.25	0.0012	mg/L			02/27/23 14:01	1
Benzene	0.057		0.025	0.00042	mg/L			02/27/23 14:01	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/27/23 14:01	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/27/23 14:01	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/27/23 14:01	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/27/23 14:01	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/27/23 14:01	1
Chloroform	ND		0.025	0.00047	mg/L			02/27/23 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		80 - 120		02/27/23 14:01	1
Dibromofluoromethane (Surr)	102		71 - 121		02/27/23 14:01	1
4-Bromofluorobenzene (Surr)	82		80 - 120		02/27/23 14:01	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		02/27/23 14:01	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:25	03/02/23 13:39	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:25	03/02/23 13:39	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:25	03/02/23 13:39	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:25	03/02/23 13:39	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:25	03/02/23 13:39	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:25	03/02/23 13:39	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:25	03/02/23 13:39	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:25	03/02/23 13:39	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:25	03/02/23 13:39	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:25	03/02/23 13:39	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:25	03/02/23 13:39	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:25	03/02/23 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	110		46 - 137	02/28/23 07:25	03/02/23 13:39	1
Phenol-d5 (Surr)	68		26 - 120	02/28/23 07:25	03/02/23 13:39	1
Nitrobenzene-d5 (Surr)	86		24 - 120	02/28/23 07:25	03/02/23 13:39	1
2-Fluorophenol (Surr)	72		19 - 120	02/28/23 07:25	03/02/23 13:39	1
2-Fluorobiphenyl (Surr)	100		33 - 120	02/28/23 07:25	03/02/23 13:39	1
2,4,6-Tribromophenol (Surr)	93		10 - 120	02/28/23 07:25	03/02/23 13:39	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/28/23 07:30	02/28/23 14:49	1
Endrin	ND		0.00050	0.0000065	mg/L		02/28/23 07:30	02/28/23 14:49	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/28/23 07:30	02/28/23 14:49	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/28/23 07:30	02/28/23 14:49	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/28/23 07:30	02/28/23 14:49	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/28/23 07:30	02/28/23 14:49	1
Toxaphene	ND		0.020	0.000058	mg/L		02/28/23 07:30	02/28/23 14:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	70		10 - 145	02/28/23 07:30	02/28/23 14:49	1
DCB Decachlorobiphenyl	67		10 - 145	02/28/23 07:30	02/28/23 14:49	1
Tetrachloro-m-xylene	61		10 - 123	02/28/23 07:30	02/28/23 14:49	1
Tetrachloro-m-xylene	67		10 - 123	02/28/23 07:30	02/28/23 14:49	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/01/23 19:30	03/02/23 07:32	1
2,4-D	ND		0.050	0.016	mg/L		03/01/23 19:30	03/02/23 07:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	53		26 - 136	03/01/23 19:30	03/02/23 07:32	1
2,4-Dichlorophenylacetic acid (Surr)	52		26 - 136	03/01/23 19:30	03/02/23 07:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability Screen (SW846 1030)	Negative				NONE			03/02/23 13:36	1
Percent Solids (EPA Moisture)	76.4		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	23.6		0.1	0.1	%			02/27/23 13:12	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.4

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		67	34	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1221	ND		67	40	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1232	ND		67	28	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1242	ND		67	26	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1248	ND		67	23	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1254	ND		67	28	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1260	ND		67	28	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1262	ND		67	30	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1
Aroclor-1268	280		67	22	ug/Kg	✳	02/27/23 12:32	02/28/23 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	43		10 - 149	02/27/23 12:32	02/28/23 19:32	1
DCB Decachlorobiphenyl	148		10 - 174	02/27/23 12:32	02/28/23 19:32	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	ND		0.78	0.26	ng/g	✳	02/28/23 19:41	03/02/23 21:12	1
Perfluorooctanesulfonic acid	ND		0.78	0.26	ng/g	✳	02/28/23 19:41	03/02/23 21:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C8 PFOA	85		26 - 159	02/28/23 19:41	03/02/23 21:12	1
¹³ C8 PFOS	88		41 - 154	02/28/23 19:41	03/02/23 21:12	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/27/23 14:25	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/27/23 14:25	1
2-Butanone (MEK)	0.029	J B	0.25	0.0012	mg/L			02/27/23 14:25	1
Benzene	ND		0.025	0.00042	mg/L			02/27/23 14:25	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/27/23 14:25	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/27/23 14:25	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/27/23 14:25	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/27/23 14:25	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/27/23 14:25	1
Chloroform	ND		0.025	0.00047	mg/L			02/27/23 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		02/27/23 14:25	1
Dibromofluoromethane (Surr)	100		71 - 121		02/27/23 14:25	1
4-Bromofluorobenzene (Surr)	82		80 - 120		02/27/23 14:25	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		02/27/23 14:25	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:25	03/02/23 14:05	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:25	03/02/23 14:05	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:25	03/02/23 14:05	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:25	03/02/23 14:05	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:25	03/02/23 14:05	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:25	03/02/23 14:05	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:25	03/02/23 14:05	1
2-Methylphenol	0.00087	J	0.0040	0.00021	mg/L		02/28/23 07:25	03/02/23 14:05	1
3 & 4 Methylphenol	0.0013	J	0.0040	0.00019	mg/L		02/28/23 07:25	03/02/23 14:05	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:25	03/02/23 14:05	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:25	03/02/23 14:05	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:25	03/02/23 14:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	105		46 - 137	02/28/23 07:25	03/02/23 14:05	1
Phenol-d5 (Surr)	64		26 - 120	02/28/23 07:25	03/02/23 14:05	1
Nitrobenzene-d5 (Surr)	81		24 - 120	02/28/23 07:25	03/02/23 14:05	1
2-Fluorophenol (Surr)	68		19 - 120	02/28/23 07:25	03/02/23 14:05	1
2-Fluorobiphenyl (Surr)	94		33 - 120	02/28/23 07:25	03/02/23 14:05	1
2,4,6-Tribromophenol (Surr)	84		10 - 120	02/28/23 07:25	03/02/23 14:05	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/28/23 07:30	02/28/23 15:06	1
Endrin	ND		0.00050	0.0000065	mg/L		02/28/23 07:30	02/28/23 15:06	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/28/23 07:30	02/28/23 15:06	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/28/23 07:30	02/28/23 15:06	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/28/23 07:30	02/28/23 15:06	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/28/23 07:30	02/28/23 15:06	1
Toxaphene	ND		0.020	0.000058	mg/L		02/28/23 07:30	02/28/23 15:06	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	02/28/23 07:30	02/28/23 15:06	1
DCB Decachlorobiphenyl	70		10 - 145	02/28/23 07:30	02/28/23 15:06	1
Tetrachloro-m-xylene	61		10 - 123	02/28/23 07:30	02/28/23 15:06	1
Tetrachloro-m-xylene	63		10 - 123	02/28/23 07:30	02/28/23 15:06	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/01/23 19:30	03/02/23 07:59	1
2,4-D	ND		0.050	0.016	mg/L		03/01/23 19:30	03/02/23 07:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	52		26 - 136	03/01/23 19:30	03/02/23 07:59	1
2,4-Dichlorophenylacetic acid (Surr)	51		26 - 136	03/01/23 19:30	03/02/23 07:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability Screen (SW846 1030)	Negative				NONE			03/02/23 13:36	1
Percent Solids (EPA Moisture)	93.3		0.1	0.1	%			02/27/23 13:12	1
Percent Moisture (EPA Moisture)	6.7		0.1	0.1	%			02/27/23 13:12	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.3

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		500	250	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1221	ND		500	300	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1232	ND		500	210	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1242	ND		500	190	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1248	ND		500	170	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1254	ND		500	210	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1260	ND		500	210	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1262	ND		500	220	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1
Aroclor-1268	ND		500	160	ug/Kg	☼	02/27/23 12:32	02/28/23 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	117		10 - 149	02/27/23 12:32	02/28/23 19:49	1
DCB Decachlorobiphenyl	121		10 - 174	02/27/23 12:32	02/28/23 19:49	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-180954-1	WC-SB2325-PELLETS & SOIL	79	77	71	75
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	85	88	77	81
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	80	84	72	73
240-180954-2	WC-SB2636-PELLETS & SOIL	80	75	74	74
240-180954-3	WC-SB1855-PELLETS & SOIL	80	78	74	77
240-180954-3	WC-SB1855-PELLETS & SOIL	109	105	136 *3	97
240-180954-4	WC-SB1252-PELLETS & SOIL	79	78	74	78
240-180954-5	WC-SB1841-PELLETS & SOIL	81	78	72	76
240-180954-6	WC-TW-7 (2-4)	79	77	72	75
240-180954-7	WC-TW-6 (2-4)	80	76	72	76
240-180954-8	WC-TW-5 (2-4)	80	77	73	75
240-180954-9	WC-TW-1 (4-6)	79	77	72	76
240-180954-10	WC-TW-9 (8-10)	83	86	75	84
240-180954-10	WC-TW-9 (8-10)	108	97	104	86
240-180954-11	WC-TW-3 (2-4)	79	74	71	75
240-180954-12	WC-TW-8 (6-8)	77	79	73	77
240-180954-12	WC-TW-8 (6-8)	110	94	104	84
240-180954-13	WC-TW-2 (2-4)	77	81	71	77
240-180954-13	WC-TW-2 (2-4)	103	93	108	84
240-180954-14	WC-TW-4 (2-4)	81	76	75	74
240-180954-15	WC-TW-10 (6-8)	79	75	71	73
LCS 240-563638/2-A	Lab Control Sample	86	92	78	82
LCS 240-563784/4	Lab Control Sample	96	100	102	87
MB 240-563638/1-A	Method Blank	78	80	68	77
MB 240-563777/1-A	Method Blank	100	102	104	88

Surrogate Legend

- TOL = Toluene-d8 (Surr)
- DBFM = Dibromofluoromethane (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-563488/12	Lab Control Sample	98	102	94	98

Surrogate Legend

- TOL = Toluene-d8 (Surr)
- DBFM = Dibromofluoromethane (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-180954-16	WC-TW-COMP (TW-1 THRU TV	96	107	84	105
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	92	102	82	100
240-180954-18	WC-PELLETS & SOIL-COMP	93	100	82	100
LB 240-563461/1-A MB	Method Blank	94	106	81	103

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-180954-1	WC-SB2325-PELLETS & SOIL	54	43	35	40	42	42
240-180954-2	WC-SB2636-PELLETS & SOIL	87	71	60	64	77	65
240-180954-3	WC-SB1855-PELLETS & SOIL	85	65	60	59	70	62
240-180954-4	WC-SB1252-PELLETS & SOIL	88	73	62	64	77	68
240-180954-5	WC-SB1841-PELLETS & SOIL	87	65	56	61	71	60
240-180954-6	WC-TW-7 (2-4)	17 S1-	17 S1-	16 S1-	14 S1-	15 S1-	14
240-180954-7	WC-TW-6 (2-4)	26 S1-	28	24 S1-	21	23 S1-	21
240-180954-8	WC-TW-5 (2-4)	35 S1-	23 S1-	32	24	27 S1-	34
240-180954-9	WC-TW-1 (4-6)	49	48	47	38	48	40
240-180954-10	WC-TW-9 (8-10)	32 S1-	28	29	26	30 S1-	26
240-180954-11	WC-TW-3 (2-4)	20 S1-	23 S1-	20 S1-	18 S1-	19 S1-	19
240-180954-12	WC-TW-8 (6-8)	77	72	69	75	72	76
240-180954-13	WC-TW-2 (2-4)	12 S1-	12 S1-	12 S1-	13 S1-	13 S1-	13
240-180954-14	WC-TW-4 (2-4)	18 S1-	17 S1-	18 S1-	14 S1-	17 S1-	22
240-180954-15	WC-TW-10 (6-8)	14 S1-	14 S1-	13 S1-	17 S1-	14 S1-	14
LCS 240-563569/24-A	Lab Control Sample	87	68	67	64	71	70
LCS 240-563569/25-A	Lab Control Sample	92	66	68	56	77	24
MB 240-563569/23-A	Method Blank	95	71	65	58	79	34

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-563671/7-A	Lab Control Sample	108	71	88	74	100	84

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
MB 240-563671/6-A	Method Blank	102	65	81	68	88	76

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180954-16	WC-TW-COMP (TW-1 THRU TV	112	68	84	74	98	88
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	110	68	86	72	100	93
240-180954-18	WC-PELLETS & SOIL-COMP	105	64	81	68	94	84

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-563676/6-A	Lab Control Sample	72	70	60	70
MB 240-563676/5-A	Method Blank	70	74	65	77

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-180954-16	WC-TW-COMP (TW-1 THRU TV	68	72	61	70
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	64	69	60	69
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	70	67	61	67
240-180954-18	WC-PELLETS & SOIL-COMP	73	70	61	63

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (10-149)	DCBP2 (10-174)
240-180954-16	WC-TW-COMP (TW-1 THRU TV	54	95 p

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (10-149)	DCBP1 (10-174)
240-180954-17	WC-TW-COMP (TW-6 THRU TV	43	148
240-180954-18	WC-PELLETS & SOIL-COMP	117	121
LCS 240-563578/2-A	Lab Control Sample	115	100
MB 240-563578/1-A	Method Blank	106	86

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)
LCS 410-349322/3-A	Lab Control Sample	63

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (26-136)
MB 410-349322/2-A	Method Blank	61

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
240-180954-16	WC-TW-COMP (TW-1 THRU TV		54

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8151A - Herbicides (GC) (Continued)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TV		60
240-180954-16 MSD	WC-TW-COMP (TW-1 THRU TW-5)		65
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	53	52
240-180954-18	WC-PELLETS & SOIL-COMP	52	51

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 240-563488/12
Matrix: Solid
Analysis Batch: 563488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.13		mg/L		113	74 - 127
1,2-Dichloroethane	1.00	0.980		mg/L		98	72 - 120
2-Butanone (MEK)	2.00	2.14		mg/L		107	68 - 130
Benzene	1.00	1.06		mg/L		106	80 - 121
Carbon tetrachloride	1.00	0.920		mg/L		92	69 - 120
Chlorobenzene	1.00	1.01		mg/L		101	80 - 120
Chloroform	1.00	1.06		mg/L		106	75 - 120
Tetrachloroethene	1.00	1.01		mg/L		101	74 - 120
Trichloroethene	1.00	0.961		mg/L		96	75 - 120
Vinyl chloride	1.00	0.816		mg/L		82	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	102		71 - 121
4-Bromofluorobenzene (Surr)	94		80 - 120
1,2-Dichloroethane-d4 (Surr)	98		76 - 120

Lab Sample ID: MB 240-563638/1-A
Matrix: Solid
Analysis Batch: 563775

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
2-Hexanone	ND		1.0	0.26	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Acetone	ND		1.0	0.24	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Benzene	ND		0.25	0.042	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Bromoform	ND		0.25	0.23	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Bromomethane	ND		0.25	0.17	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Chloroethane	ND		0.25	0.15	mg/Kg		02/27/23 17:21	02/28/23 16:12	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563638/1-A
Matrix: Solid
Analysis Batch: 563775

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.25	0.054	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Chloromethane	ND		0.25	0.066	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Cyclohexane	ND		0.50	0.16	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Methyl acetate	ND		1.3	0.17	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Styrene	ND		0.25	0.052	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Toluene	ND		0.25	0.24	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Trichloroethene	ND		0.25	0.14	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Butyl acrylate	ND		2.5	1.4	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		02/27/23 17:21	02/28/23 16:12	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		02/27/23 17:21	02/28/23 16:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125	02/27/23 17:21	02/28/23 16:12	1
Dibromofluoromethane (Surr)	80		41 - 138	02/27/23 17:21	02/28/23 16:12	1
4-Bromofluorobenzene (Surr)	68		41 - 143	02/27/23 17:21	02/28/23 16:12	1
1,2-Dichloroethane-d4 (Surr)	77		58 - 125	02/27/23 17:21	02/28/23 16:12	1

Lab Sample ID: LCS 240-563638/2-A
Matrix: Solid
Analysis Batch: 563775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.25	1.34		mg/Kg		107	74 - 136
1,1,1,2-Tetrachloroethane	1.25	1.08		mg/Kg		87	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.55		mg/Kg		124	64 - 148
1,1,1,2-Trichloroethane	1.25	1.25		mg/Kg		100	79 - 120
1,1-Dichloroethane	1.25	1.14		mg/Kg		91	74 - 121
1,1-Dichloroethene	1.25	1.36		mg/Kg		109	68 - 141
1,2,4-Trichlorobenzene	1.25	1.23		mg/Kg		98	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.812		mg/Kg		65	52 - 133
Ethylene Dibromide	1.25	1.20		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	1.25	1.21		mg/Kg		97	73 - 120
1,2-Dichloroethane	1.25	1.15		mg/Kg		92	71 - 123

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563638/2-A
Matrix: Solid
Analysis Batch: 563775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloropropane	1.25	1.13		mg/Kg		91	76 - 126
1,3-Dichlorobenzene	1.25	1.23		mg/Kg		99	73 - 120
1,4-Dichlorobenzene	1.25	1.21		mg/Kg		96	74 - 120
2-Butanone (MEK)	2.50	2.57		mg/Kg		103	63 - 142
2-Hexanone	2.50	2.00		mg/Kg		80	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.08		mg/Kg		83	62 - 142
Acetone	2.50	2.87		mg/Kg		115	58 - 160
Benzene	1.25	1.29		mg/Kg		104	76 - 121
Dichlorobromomethane	1.25	1.16		mg/Kg		93	71 - 138
Bromoform	1.25	1.06		mg/Kg		85	57 - 140
Bromomethane	1.25	0.807		mg/Kg		65	10 - 171
Carbon disulfide	1.25	1.13		mg/Kg		91	43 - 152
Carbon tetrachloride	1.25	1.40		mg/Kg		112	64 - 144
Chlorobenzene	1.25	1.20		mg/Kg		96	80 - 120
Chloroethane	1.25	1.14		mg/Kg		91	11 - 164
Chloroform	1.25	1.28		mg/Kg		102	78 - 120
Chloromethane	1.25	0.930		mg/Kg		74	41 - 142
cis-1,2-Dichloroethene	1.25	1.34		mg/Kg		108	78 - 124
cis-1,3-Dichloropropene	1.25	1.07		mg/Kg		86	70 - 133
Cyclohexane	1.25	1.23		mg/Kg		99	65 - 137
Chlorodibromomethane	1.25	1.08		mg/Kg		86	68 - 131
Dichlorodifluoromethane	1.25	0.974		mg/Kg		78	21 - 150
Ethylbenzene	1.25	1.24		mg/Kg		99	80 - 120
Isopropylbenzene	1.25	1.34		mg/Kg		107	80 - 130
Methyl acetate	2.50	2.22		mg/Kg		89	60 - 133
Methyl tert-butyl ether	1.25	1.21		mg/Kg		97	70 - 130
Methylcyclohexane	1.25	1.43		mg/Kg		115	70 - 138
Methylene Chloride	1.25	1.13		mg/Kg		90	71 - 124
Styrene	1.25	1.32		mg/Kg		106	75 - 140
Tetrachloroethene	1.25	1.38		mg/Kg		111	76 - 127
Toluene	1.25	1.26		mg/Kg		101	80 - 120
trans-1,2-Dichloroethene	1.25	1.38		mg/Kg		110	76 - 130
trans-1,3-Dichloropropene	1.25	0.953		mg/Kg		76	61 - 121
Trichloroethene	1.25	1.37		mg/Kg		109	74 - 130
Trichlorofluoromethane	1.25	1.33		mg/Kg		107	50 - 154
Vinyl chloride	1.25	1.18		mg/Kg		94	49 - 146
Xylenes, Total	2.50	2.59		mg/Kg		104	80 - 122
m-Xylene & p-Xylene	1.25	1.27		mg/Kg		102	80 - 122
o-Xylene	1.25	1.32		mg/Kg		106	80 - 124
Butyl acrylate	5.00	4.41		mg/Kg		88	10 - 120
Methyl acrylate	5.00	5.27		mg/Kg		105	10 - 120
2-Ethylhexyl acrylate	5.00	5.08		mg/Kg		102	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	86		56 - 125
Dibromofluoromethane (Surr)	92		41 - 138
4-Bromofluorobenzene (Surr)	78		41 - 143
1,2-Dichloroethane-d4 (Surr)	82		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180954-1 MS

Matrix: Solid

Analysis Batch: 563775

Client Sample ID: WC-SB2325-PELLETS & SOIL

Prep Type: Total/NA

Prep Batch: 563638

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
1,1,1-Trichloroethane	ND		2.69	2.91		mg/Kg	☼	108		46 - 144
1,1,2,2-Tetrachloroethane	ND		2.69	2.51		mg/Kg	☼	93		26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.69	3.36		mg/Kg	☼	125		35 - 164
1,1,2-Trichloroethane	ND		2.69	3.47		mg/Kg	☼	129		26 - 149
1,1-Dichloroethane	ND		2.69	2.59		mg/Kg	☼	96		46 - 135
1,1-Dichloroethene	ND		2.69	2.92		mg/Kg	☼	109		44 - 160
1,2,4-Trichlorobenzene	ND		2.69	2.75		mg/Kg	☼	102		10 - 120
1,2-Dibromo-3-Chloropropane	ND		2.69	1.68		mg/Kg	☼	62		12 - 144
Ethylene Dibromide	ND		2.69	2.83		mg/Kg	☼	105		31 - 142
1,2-Dichlorobenzene	ND		2.69	2.59		mg/Kg	☼	96		10 - 126
1,2-Dichloroethane	ND		2.69	2.59		mg/Kg	☼	96		40 - 132
1,2-Dichloropropane	ND		2.69	2.58		mg/Kg	☼	96		45 - 133
1,3-Dichlorobenzene	ND		2.69	2.62		mg/Kg	☼	98		10 - 131
1,4-Dichlorobenzene	ND		2.69	2.46		mg/Kg	☼	92		10 - 129
2-Butanone (MEK)	ND		5.37	5.60		mg/Kg	☼	104		30 - 157
2-Hexanone	ND		5.37	4.03		mg/Kg	☼	75		20 - 166
4-Methyl-2-pentanone (MIBK)	ND		5.37	4.85		mg/Kg	☼	90		31 - 159
Acetone	ND		5.37	8.57		mg/Kg	☼	159		35 - 167
Benzene	0.10	J	2.69	2.94		mg/Kg	☼	105		39 - 134
Dichlorobromomethane	ND		2.69	2.57		mg/Kg	☼	96		32 - 146
Bromoform	ND		2.69	1.97		mg/Kg	☼	73		12 - 144
Bromomethane	ND		2.69	1.57		mg/Kg	☼	58		10 - 161
Carbon disulfide	ND		2.69	2.31		mg/Kg	☼	86		24 - 153
Carbon tetrachloride	ND		2.69	2.90		mg/Kg	☼	108		37 - 145
Chlorobenzene	ND		2.69	2.59		mg/Kg	☼	97		18 - 134
Chloroethane	ND		2.69	2.35		mg/Kg	☼	88		14 - 159
Chloroform	ND		2.69	2.91		mg/Kg	☼	108		43 - 134
Chloromethane	ND		2.69	2.00		mg/Kg	☼	74		32 - 151
cis-1,2-Dichloroethene	ND		2.69	2.95		mg/Kg	☼	110		48 - 132
cis-1,3-Dichloropropene	ND		2.69	2.41		mg/Kg	☼	90		23 - 139
Cyclohexane	0.74	J	2.69	3.55		mg/Kg	☼	104		31 - 147
Chlorodibromomethane	ND		2.69	2.16		mg/Kg	☼	81		25 - 143
Dichlorodifluoromethane	ND		2.69	1.96		mg/Kg	☼	73		16 - 157
Ethylbenzene	ND		2.69	2.81		mg/Kg	☼	104		17 - 137
Isopropylbenzene	ND		2.69	2.92		mg/Kg	☼	109		10 - 146
Methyl acetate	ND		5.37	6.77		mg/Kg	☼	126		13 - 164
Methyl tert-butyl ether	ND		2.69	2.63		mg/Kg	☼	98		55 - 134
Methylcyclohexane	1.6		2.69	4.83		mg/Kg	☼	120		20 - 153
Methylene Chloride	ND		2.69	2.74		mg/Kg	☼	102		38 - 145
Styrene	ND		2.69	2.91		mg/Kg	☼	108		10 - 149
Tetrachloroethene	0.25	J	2.69	3.09		mg/Kg	☼	106		19 - 147
Toluene	ND		2.69	3.12		mg/Kg	☼	116		30 - 137
trans-1,2-Dichloroethene	ND		2.69	2.89		mg/Kg	☼	108		41 - 145
trans-1,3-Dichloropropene	ND		2.69	2.05		mg/Kg	☼	76		19 - 130
Trichloroethene	ND		2.69	3.05		mg/Kg	☼	113		21 - 158
Trichlorofluoromethane	ND		2.69	2.71		mg/Kg	☼	101		36 - 161
Vinyl chloride	ND		2.69	2.50		mg/Kg	☼	93		32 - 163
Xylenes, Total	0.78	J	5.37	6.28		mg/Kg	☼	102		17 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180954-1 MSD

Client Sample ID: WC-SB2325-PELLETS & SOIL

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 563775

Prep Batch: 563638

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Chlorodibromomethane	ND		2.69	1.97		mg/Kg	⊛	73	25 - 143	9	40	
Dichlorodifluoromethane	ND		2.69	1.88		mg/Kg	⊛	70	16 - 157	5	40	
Ethylbenzene	ND		2.69	2.66		mg/Kg	⊛	99	17 - 137	5	40	
Isopropylbenzene	ND		2.69	2.80		mg/Kg	⊛	104	10 - 146	4	40	
Methyl acetate	ND		5.37	6.04		mg/Kg	⊛	112	13 - 164	11	40	
Methyl tert-butyl ether	ND		2.69	2.47		mg/Kg	⊛	92	55 - 134	6	37	
Methylcyclohexane	1.6		2.69	4.46		mg/Kg	⊛	106	20 - 153	8	40	
Methylene Chloride	ND		2.69	2.35		mg/Kg	⊛	88	38 - 145	15	40	
Styrene	ND		2.69	2.77		mg/Kg	⊛	103	10 - 149	5	40	
Tetrachloroethene	0.25	J	2.69	2.87		mg/Kg	⊛	98	19 - 147	7	40	
Toluene	ND		2.69	2.97		mg/Kg	⊛	110	30 - 137	5	40	
trans-1,2-Dichloroethene	ND		2.69	2.77		mg/Kg	⊛	103	41 - 145	4	37	
trans-1,3-Dichloropropene	ND		2.69	1.94		mg/Kg	⊛	72	19 - 130	6	40	
Trichloroethene	ND		2.69	2.83		mg/Kg	⊛	105	21 - 158	7	40	
Trichlorofluoromethane	ND		2.69	2.53		mg/Kg	⊛	94	36 - 161	7	40	
Vinyl chloride	ND		2.69	2.38		mg/Kg	⊛	88	32 - 163	5	38	
Xylenes, Total	0.78	J	5.37	5.88		mg/Kg	⊛	95	17 - 138	7	40	
m-Xylene & p-Xylene	0.44	J	2.69	2.98		mg/Kg	⊛	95	10 - 141	6	40	
o-Xylene	0.34	J	2.69	2.90		mg/Kg	⊛	95	18 - 139	7	40	
Butyl acrylate	ND		10.7	9.70		mg/Kg	⊛	90	10 - 120	5	30	
Methyl acrylate	ND		10.7	10.7		mg/Kg	⊛	100	10 - 120	12	30	
2-Ethylhexyl acrylate	ND		10.7	11.8		mg/Kg	⊛	110	10 - 120	13	30	

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	80		56 - 125
Dibromofluoromethane (Surr)	84		41 - 138
4-Bromofluorobenzene (Surr)	72		41 - 143
1,2-Dichloroethane-d4 (Surr)	73		58 - 125

Lab Sample ID: MB 240-563777/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 563784

Prep Batch: 563777

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		02/28/23 15:57	02/28/23 18:46	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		56 - 125	02/28/23 15:57	02/28/23 18:46	1
Dibromofluoromethane (Surr)	102		41 - 138	02/28/23 15:57	02/28/23 18:46	1
4-Bromofluorobenzene (Surr)	104		41 - 143	02/28/23 15:57	02/28/23 18:46	1
1,2-Dichloroethane-d4 (Surr)	88		58 - 125	02/28/23 15:57	02/28/23 18:46	1

Lab Sample ID: LCS 240-563784/4

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 563784

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Vinyl chloride	0.0250	0.0233		mg/Kg		93	49 - 146

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563784/4
Matrix: Solid
Analysis Batch: 563784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		56 - 125
Dibromofluoromethane (Surr)	100		41 - 138
4-Bromofluorobenzene (Surr)	102		41 - 143
1,2-Dichloroethane-d4 (Surr)	87		58 - 125

Lab Sample ID: LB 240-563461/1-A MB
Matrix: Solid
Analysis Batch: 563488

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			02/27/23 12:50	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			02/27/23 12:50	1
2-Butanone (MEK)	0.0203	J	0.25	0.0012	mg/L			02/27/23 12:50	1
Benzene	ND		0.025	0.00042	mg/L			02/27/23 12:50	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			02/27/23 12:50	1
Chlorobenzene	ND		0.025	0.00038	mg/L			02/27/23 12:50	1
Chloroform	ND		0.025	0.00047	mg/L			02/27/23 12:50	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			02/27/23 12:50	1
Trichloroethene	ND		0.025	0.00044	mg/L			02/27/23 12:50	1
Vinyl chloride	ND		0.025	0.00045	mg/L			02/27/23 12:50	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	94		80 - 120		02/27/23 12:50	1
Dibromofluoromethane (Surr)	106		71 - 121		02/27/23 12:50	1
4-Bromofluorobenzene (Surr)	81		80 - 120		02/27/23 12:50	1
1,2-Dichloroethane-d4 (Surr)	103		76 - 120		02/27/23 12:50	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563569/23-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563569

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		02/27/23 11:53	03/01/23 11:17	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563569/23-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563569

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Nitrophenol	ND		0.050	0.013	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Acetophenone	ND		0.10	0.011	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Anthracene	ND		0.015	0.0024	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Atrazine	ND		0.20	0.036	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Caprolactam	ND		0.33	0.075	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Carbazole	ND		0.050	0.019	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Chrysene	ND		0.015	0.0015	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Fluorene	ND		0.015	0.0027	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Isophorone	ND		0.050	0.012	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Naphthalene	ND		0.015	0.0024	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
Phenol	ND		0.050	0.0080	mg/Kg		02/27/23 11:53	03/01/23 11:17	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563569/23-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.015	0.0021	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		02/27/23 11:53	03/01/23 11:17	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		02/27/23 11:53	03/01/23 11:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	95		46 - 137	02/27/23 11:53	03/01/23 11:17	1
Phenol-d5 (Surr)	71		26 - 120	02/27/23 11:53	03/01/23 11:17	1
Nitrobenzene-d5 (Surr)	65		25 - 120	02/27/23 11:53	03/01/23 11:17	1
2-Fluorophenol (Surr)	58		20 - 120	02/27/23 11:53	03/01/23 11:17	1
2-Fluorobiphenyl (Surr)	79		34 - 120	02/27/23 11:53	03/01/23 11:17	1
2,4,6-Tribromophenol (Surr)	34		10 - 120	02/27/23 11:53	03/01/23 11:17	1

Lab Sample ID: LCS 240-563569/24-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1'-Biphenyl	0.667	0.439		mg/Kg		66	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.425		mg/Kg		64	38 - 120
2,4,5-Trichlorophenol	0.667	0.449		mg/Kg		67	50 - 120
2,4,6-Trichlorophenol	0.667	0.451		mg/Kg		68	50 - 120
2,4-Dichlorophenol	0.667	0.414		mg/Kg		62	50 - 120
2,4-Dimethylphenol	0.667	0.314		mg/Kg		47	24 - 120
2,4-Dinitrophenol	1.33	0.668		mg/Kg		50	19 - 132
2,4-Dinitrotoluene	0.667	0.517		mg/Kg		78	64 - 120
2,6-Dinitrotoluene	0.667	0.508		mg/Kg		76	62 - 120
2-Chloronaphthalene	0.667	0.439		mg/Kg		66	51 - 120
2-Chlorophenol	0.667	0.394		mg/Kg		59	47 - 120
2-Methylnaphthalene	0.667	0.401		mg/Kg		60	38 - 120
2-Methylphenol	0.667	0.384		mg/Kg		58	45 - 120
2-Nitroaniline	0.667	0.516		mg/Kg		77	57 - 120
2-Nitrophenol	0.667	0.415		mg/Kg		62	51 - 120
3,3'-Dichlorobenzidine	1.33	0.947		mg/Kg		71	27 - 199
3-Nitroaniline	0.667	0.450		mg/Kg		68	41 - 120
4,6-Dinitro-2-methylphenol	1.33	0.827		mg/Kg		62	46 - 126
4-Bromophenyl phenyl ether	0.667	0.440		mg/Kg		66	65 - 120
4-Chloro-3-methylphenol	0.667	0.441		mg/Kg		66	51 - 120
4-Chloroaniline	0.667	0.338		mg/Kg		51	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.457		mg/Kg		69	59 - 120
4-Nitroaniline	0.667	0.456		mg/Kg		68	48 - 128
4-Nitrophenol	1.33	1.09		mg/Kg		82	43 - 120
Acenaphthene	0.667	0.470		mg/Kg		71	52 - 120
Acenaphthylene	0.667	0.429		mg/Kg		64	52 - 120
Acetophenone	0.667	0.408		mg/Kg		61	47 - 120
Anthracene	0.667	0.483		mg/Kg		72	64 - 120
Atrazine	1.33	1.10		mg/Kg		83	71 - 125
Benzaldehyde	1.33	0.842		mg/Kg		63	42 - 120
Benzo[a]anthracene	0.667	0.534		mg/Kg		80	70 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563569/24-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	0.667	0.463		mg/Kg		70	63 - 125
Benzo[b]fluoranthene	0.667	0.523		mg/Kg		78	64 - 121
Benzo[g,h,i]perylene	0.667	0.461		mg/Kg		69	62 - 120
Benzo[k]fluoranthene	0.667	0.509		mg/Kg		76	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.411		mg/Kg		62	50 - 120
Bis(2-chloroethyl)ether	0.667	0.436		mg/Kg		65	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.525		mg/Kg		79	63 - 133
Butyl benzyl phthalate	0.667	0.553		mg/Kg		83	66 - 127
Caprolactam	1.33	1.00		mg/Kg		75	67 - 120
Carbazole	0.667	0.496		mg/Kg		74	61 - 129
Chrysene	0.667	0.540		mg/Kg		81	67 - 120
Dibenz(a,h)anthracene	0.667	0.462		mg/Kg		69	62 - 120
Dibenzofuran	0.667	0.447		mg/Kg		67	55 - 120
Diethyl phthalate	0.667	0.506		mg/Kg		76	61 - 120
Dimethyl phthalate	0.667	0.494		mg/Kg		74	64 - 120
Di-n-butyl phthalate	0.667	0.508		mg/Kg		76	70 - 129
Di-n-octyl phthalate	0.667	0.496		mg/Kg		74	64 - 129
Fluoranthene	0.667	0.492		mg/Kg		74	71 - 124
Fluorene	0.667	0.474		mg/Kg		71	58 - 120
Hexachlorobenzene	0.667	0.427		mg/Kg		64	59 - 120
Hexachlorobutadiene	0.667	0.400		mg/Kg		60	45 - 120
Hexachlorocyclopentadiene	0.667	0.303	J	mg/Kg		45	10 - 120
Hexachloroethane	0.667	0.381		mg/Kg		57	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.468		mg/Kg		70	65 - 122
Isophorone	0.667	0.430		mg/Kg		65	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.387		mg/Kg		58	48 - 120
N-Nitrosodiphenylamine	0.667	0.452		mg/Kg		68	64 - 120
Naphthalene	0.667	0.400		mg/Kg		60	34 - 120
Nitrobenzene	0.667	0.411		mg/Kg		62	48 - 120
Pentachlorophenol	1.33	0.460		mg/Kg		34	10 - 120
Phenanthrene	0.667	0.471		mg/Kg		71	60 - 120
Phenol	0.667	0.407		mg/Kg		61	48 - 120
Pyrene	0.667	0.537		mg/Kg		81	67 - 120
3 & 4 Methylphenol	0.667	0.389	J	mg/Kg		58	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	87		46 - 137
Phenol-d5 (Surr)	68		26 - 120
Nitrobenzene-d5 (Surr)	67		25 - 120
2-Fluorophenol (Surr)	64		20 - 120
2-Fluorobiphenyl (Surr)	71		34 - 120
2,4,6-Tribromophenol (Surr)	70		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563569/25-A
Matrix: Solid
Analysis Batch: 563825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butoxyethanol	0.667	0.507		mg/Kg		76	
Surrogate							
	%Recovery	LCS Qualifier	Limits				
Terphenyl-d14 (Surr)	92		46 - 137				
Phenol-d5 (Surr)	66		26 - 120				
Nitrobenzene-d5 (Surr)	68		25 - 120				
2-Fluorophenol (Surr)	56		20 - 120				
2-Fluorobiphenyl (Surr)	77		34 - 120				
2,4,6-Tribromophenol (Surr)	24		10 - 120				

Lab Sample ID: MB 240-563671/6-A
Matrix: Solid
Analysis Batch: 563967

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		02/28/23 07:25	03/02/23 10:36	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		02/28/23 07:25	03/02/23 10:36	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		02/28/23 07:25	03/02/23 10:36	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		02/28/23 07:25	03/02/23 10:36	1
Pyridine	ND		0.0040	0.00036	mg/L		02/28/23 07:25	03/02/23 10:36	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		02/28/23 07:25	03/02/23 10:36	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		02/28/23 07:25	03/02/23 10:36	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		02/28/23 07:25	03/02/23 10:36	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		02/28/23 07:25	03/02/23 10:36	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		02/28/23 07:25	03/02/23 10:36	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		02/28/23 07:25	03/02/23 10:36	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		02/28/23 07:25	03/02/23 10:36	1
Surrogate									
	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Terphenyl-d14 (Surr)	102		46 - 137			02/28/23 07:25	03/02/23 10:36	1	
Phenol-d5 (Surr)	65		26 - 120			02/28/23 07:25	03/02/23 10:36	1	
Nitrobenzene-d5 (Surr)	81		24 - 120			02/28/23 07:25	03/02/23 10:36	1	
2-Fluorophenol (Surr)	68		19 - 120			02/28/23 07:25	03/02/23 10:36	1	
2-Fluorobiphenyl (Surr)	88		33 - 120			02/28/23 07:25	03/02/23 10:36	1	
2,4,6-Tribromophenol (Surr)	76		10 - 120			02/28/23 07:25	03/02/23 10:36	1	

Lab Sample ID: LCS 240-563671/7-A
Matrix: Solid
Analysis Batch: 563967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.0800	0.0669		mg/L		84	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0862		mg/L		108	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0795		mg/L		99	51 - 120
2,4-Dinitrotoluene	0.0800	0.0847		mg/L		106	58 - 125
Pyridine	0.160	0.0536		mg/L		34	10 - 120
2-Methylphenol	0.0800	0.0742		mg/L		93	45 - 120
Hexachlorobenzene	0.0800	0.0711		mg/L		89	55 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563671/7-A
Matrix: Solid
Analysis Batch: 563967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobutadiene	0.0800	0.0799		mg/L		100	41 - 120
Hexachloroethane	0.0800	0.0727		mg/L		91	39 - 120
Nitrobenzene	0.0800	0.0748		mg/L		94	47 - 120
Pentachlorophenol	0.160	0.132		mg/L		83	19 - 132
3 & 4 Methylphenol	0.0800	0.0658		mg/L		82	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	108		46 - 137
Phenol-d5 (Surr)	71		26 - 120
Nitrobenzene-d5 (Surr)	88		24 - 120
2-Fluorophenol (Surr)	74		19 - 120
2-Fluorobiphenyl (Surr)	100		33 - 120
2,4,6-Tribromophenol (Surr)	84		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-563676/5-A
Matrix: Solid
Analysis Batch: 563710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		02/28/23 07:30	02/28/23 13:40	1
Endrin	ND		0.00050	0.0000065	mg/L		02/28/23 07:30	02/28/23 13:40	1
Heptachlor	ND		0.00050	0.0000082	mg/L		02/28/23 07:30	02/28/23 13:40	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		02/28/23 07:30	02/28/23 13:40	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		02/28/23 07:30	02/28/23 13:40	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		02/28/23 07:30	02/28/23 13:40	1
Toxaphene	ND		0.020	0.000058	mg/L		02/28/23 07:30	02/28/23 13:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	70		10 - 145	02/28/23 07:30	02/28/23 13:40	1
DCB Decachlorobiphenyl	74		10 - 145	02/28/23 07:30	02/28/23 13:40	1
Tetrachloro-m-xylene	65		10 - 123	02/28/23 07:30	02/28/23 13:40	1
Tetrachloro-m-xylene	77		10 - 123	02/28/23 07:30	02/28/23 13:40	1

Lab Sample ID: LCS 240-563676/6-A
Matrix: Solid
Analysis Batch: 563710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563676

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endrin	0.00100	0.000808		mg/L		81	36 - 120
Heptachlor	0.00100	0.000760		mg/L		76	29 - 120
Heptachlor epoxide	0.00100	0.000770		mg/L		77	36 - 120
gamma-BHC (Lindane)	0.00100	0.000771		mg/L		77	23 - 120
Methoxychlor	0.00100	0.000957	J	mg/L		96	23 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	72		10 - 145

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-563676/6-A
Matrix: Solid
Analysis Batch: 563710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563676

Surrogate	LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	70		10 - 145
Tetrachloro-m-xylene	60		10 - 123
Tetrachloro-m-xylene	70		10 - 123

Lab Sample ID: 240-180954-16 MS
Matrix: Solid
Analysis Batch: 563710

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)
Prep Type: TCLP
Prep Batch: 563676

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Endrin	ND		0.00100	0.000795		mg/L		80	58 - 120
Heptachlor	ND		0.00100	0.000743		mg/L		74	42 - 120
Heptachlor epoxide	ND		0.00100	0.000745		mg/L		75	54 - 120
gamma-BHC (Lindane)	ND		0.00100	0.000736		mg/L		74	32 - 120
Methoxychlor	ND		0.00100	0.000986	J	mg/L		99	11 - 159

Surrogate	MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	64		10 - 145
DCB Decachlorobiphenyl	69		10 - 145
Tetrachloro-m-xylene	60		10 - 123
Tetrachloro-m-xylene	69		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-563578/1-A
Matrix: Solid
Analysis Batch: 563699

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563578

Analyte	MB	MB	RL	MDL	Unit	D	Prepared		Analyzed		Dil Fac
	Result	Qualifier									
Aroclor-1016	ND		50	25	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1221	ND		50	30	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1232	ND		50	21	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1242	ND		50	19	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1248	ND		50	17	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1254	ND		50	21	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1260	ND		50	21	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1262	ND		50	22	ug/Kg		02/27/23 12:32	02/28/23 12:38			1
Aroclor-1268	ND		50	16	ug/Kg		02/27/23 12:32	02/28/23 12:38			1

Surrogate	MB		Limits	Prepared		Analyzed		Dil Fac
	%Recovery	Qualifier						
Tetrachloro-m-xylene	106		10 - 149	02/27/23 12:32	02/28/23 12:38			1
DCB Decachlorobiphenyl	86		10 - 174	02/27/23 12:32	02/28/23 12:38			1

Lab Sample ID: LCS 240-563578/2-A
Matrix: Solid
Analysis Batch: 563699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563578

Analyte	Spike	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Aroclor-1016	1000	1020		ug/Kg		102	28 - 140

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-563578/2-A
Matrix: Solid
Analysis Batch: 563699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563578

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1260	1000	968		ug/Kg		97	39 - 153
		LCS	LCS				
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene	115		10 - 149				
DCB Decachlorobiphenyl	100		10 - 174				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-349322/2-A
Matrix: Solid
Analysis Batch: 349396

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349322

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/01/23 19:30	03/02/23 05:12	1
2,4-D	ND		0.050	0.016	mg/L		03/01/23 19:30	03/02/23 05:12	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	03/01/23 19:30	03/02/23 05:12	1			

Lab Sample ID: LCS 410-349322/3-A
Matrix: Solid
Analysis Batch: 349396

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349322

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00317	J	mg/L		63	58 - 148
2,4-D	0.0502	0.0298	J	mg/L		59	42 - 147
		LCS	LCS				
Surrogate	%Recovery	Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136				

Lab Sample ID: 240-180954-16 MS
Matrix: Solid
Analysis Batch: 349396

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)
Prep Type: TCLP
Prep Batch: 349322

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	ND		0.00500	0.00313	J	mg/L		63	58 - 148
2,4-D	ND		0.0502	0.0294	J	mg/L		59	42 - 147
		MS	MS						
Surrogate	%Recovery	Qualifier	Limits						
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136						

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 240-180954-16 MSD
Matrix: Solid
Analysis Batch: 349396

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)
Prep Type: TCLP
Prep Batch: 349322

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Silvex (2,4,5-TP)	ND		0.00500	0.00328	J	mg/L		66	58 - 148	5	30
2,4-D	ND		0.0502	0.0308	J	mg/L		61	42 - 147	5	30
		MSD	MSD								
Surrogate	%Recovery	Qualifier	Limits								
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136								

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-348895/1-B
Matrix: Solid
Analysis Batch: 349425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348895

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
Perfluorooctanoic acid	ND		0.60	0.20	ng/g		02/28/23 19:41	03/02/23 20:50	1	
Perfluorooctanesulfonic acid	ND		0.60	0.20	ng/g		02/28/23 19:41	03/02/23 20:50	1	
		MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
13C8 PFOA	89		26 - 159	02/28/23 19:41	03/02/23 20:50	1				
13C8 PFOS	94		41 - 154	02/28/23 19:41	03/02/23 20:50	1				

Lab Sample ID: LCS 410-348895/2-B
Matrix: Solid
Analysis Batch: 349425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348895

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier				Limits	
Perfluorooctanoic acid	25.0	20.2		ng/g		81	59 - 131	
Perfluorooctanesulfonic acid	23.1	19.9		ng/g		86	61 - 126	
		LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits					
13C8 PFOA	95		26 - 159					
13C8 PFOS	92		41 - 154					

Lab Sample ID: 240-180954-17 MS
Matrix: Solid
Analysis Batch: 349425

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)
Prep Type: Total/NA
Prep Batch: 348895

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				Limits	
Perfluorooctanoic acid	ND		31.8	26.0		ng/g	☼	82	59 - 131	
Perfluorooctanesulfonic acid	ND		29.4	24.9		ng/g	☼	85	61 - 126	
		MS	MS							
Isotope Dilution	%Recovery	Qualifier	Limits							
13C8 PFOA	92		26 - 159							
13C8 PFOS	95		41 - 154							

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-180954-17 MSD
Matrix: Solid
Analysis Batch: 349425

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)
Prep Type: Total/NA
Prep Batch: 348895

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Perfluorooctanoic acid	ND		30.3	26.0		ng/g	☼	86	59 - 131	0	30
Perfluorooctanesulfonic acid	ND		28.0	24.2		ng/g	☼	86	61 - 126	3	30
		MSD	MSD								
Isotope Dilution	%Recovery	Qualifier	Limits								
13C8 PFOA	83		26 - 159								
13C8 PFOS	90		41 - 154								

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-563594/2-A
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563594

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 05:36	1
Barium	ND		0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 05:36	1
Cadmium	ND		0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 05:36	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 05:36	1
Lead	ND		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 05:36	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 05:36	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 05:36	1

Lab Sample ID: LCS 240-563594/3-A
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563594

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
							Limits
Arsenic	2.00	2.21		mg/L		110	50 - 150
Barium	2.00	2.02		mg/L		101	50 - 150
Cadmium	1.00	1.02		mg/L		102	50 - 150
Chromium	1.00	1.03		mg/L		103	50 - 150
Lead	1.00	0.943		mg/L		94	50 - 150
Selenium	2.00	2.26		mg/L		113	50 - 150
Silver	0.100	0.106		mg/L		106	50 - 150

Lab Sample ID: MB 240-563597/2-A
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563597

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:07	1
Barium	ND		0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:07	1
Cadmium	0.000203	J	0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:07	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:07	1
Lead	ND		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:07	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:07	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:07	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-563597/3-A
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563597

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.17		mg/L		108	50 - 150
Barium	2.00	2.00		mg/L		100	50 - 150
Cadmium	1.00	0.999		mg/L		100	50 - 150
Chromium	1.00	1.02		mg/L		102	50 - 150
Lead	1.00	0.932		mg/L		93	50 - 150
Selenium	2.00	2.21		mg/L		110	50 - 150
Silver	0.100	0.106		mg/L		106	50 - 150

Lab Sample ID: LB 240-563462/1-B
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563594

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00445	J	0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 05:32	1
Barium	0.00329	J	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 05:32	1
Cadmium	ND		0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 05:32	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 05:32	1
Lead	ND		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 05:32	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 05:32	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 05:32	1

Lab Sample ID: 240-180954-1 MS
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: WC-SB2325-PELLETS & SOIL
Prep Type: TCLP
Prep Batch: 563594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0066	J B	5.00	5.16		mg/L		103	75 - 125
Barium	0.42	J B	50.0	49.1		mg/L		97	75 - 125
Cadmium	0.0027	J	1.00	0.992		mg/L		99	75 - 125
Chromium	ND		5.00	5.00		mg/L		100	75 - 125
Lead	0.048	J	5.00	4.84		mg/L		96	75 - 125
Selenium	0.0097	J	1.00	1.07		mg/L		106	75 - 125
Silver	ND		1.00	1.01		mg/L		101	75 - 125

Lab Sample ID: 240-180954-1 MSD
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: WC-SB2325-PELLETS & SOIL
Prep Type: TCLP
Prep Batch: 563594

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	0.0066	J B	5.00	5.13		mg/L		103	75 - 125	1	20
Barium	0.42	J B	50.0	49.1		mg/L		97	75 - 125	0	20
Cadmium	0.0027	J	1.00	0.988		mg/L		99	75 - 125	0	20
Chromium	ND		5.00	4.98		mg/L		100	75 - 125	0	20
Lead	0.048	J	5.00	4.81		mg/L		95	75 - 125	1	20
Selenium	0.0097	J	1.00	1.04		mg/L		103	75 - 125	3	20
Silver	ND		1.00	1.01		mg/L		101	75 - 125	1	20

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LB 240-563463/1-B
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563597

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		02/27/23 14:00	03/01/23 07:02	1
Barium	0.00383	J	0.50	0.0013	mg/L		02/27/23 14:00	03/01/23 07:02	1
Cadmium	ND		0.050	0.00020	mg/L		02/27/23 14:00	03/01/23 07:02	1
Chromium	ND		0.050	0.0040	mg/L		02/27/23 14:00	03/01/23 07:02	1
Lead	ND		0.050	0.0028	mg/L		02/27/23 14:00	03/01/23 07:02	1
Selenium	ND		0.050	0.0060	mg/L		02/27/23 14:00	03/01/23 07:02	1
Silver	ND		0.050	0.00062	mg/L		02/27/23 14:00	03/01/23 07:02	1

Lab Sample ID: 240-180954-6 MS
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: WC-TW-7 (2-4)
Prep Type: TCLP
Prep Batch: 563597

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Arsenic	0.0098	J	5.00	5.20		mg/L		104	75 - 125
Barium	0.89	B	50.0	49.8		mg/L		98	75 - 125
Cadmium	0.0033	J B	1.00	0.991		mg/L		99	75 - 125
Chromium	ND		5.00	4.99		mg/L		100	75 - 125
Lead	0.0084	J	5.00	4.76		mg/L		95	75 - 125
Selenium	0.012	J	1.00	1.08		mg/L		107	75 - 125
Silver	ND		1.00	1.01		mg/L		101	75 - 125

Lab Sample ID: 240-180954-6 MSD
Matrix: Solid
Analysis Batch: 563911

Client Sample ID: WC-TW-7 (2-4)
Prep Type: TCLP
Prep Batch: 563597

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Arsenic	0.0098	J	5.00	5.12		mg/L		102	75 - 125	2	20
Barium	0.89	B	50.0	48.7		mg/L		96	75 - 125	2	20
Cadmium	0.0033	J B	1.00	0.974		mg/L		97	75 - 125	2	20
Chromium	ND		5.00	4.87		mg/L		97	75 - 125	3	20
Lead	0.0084	J	5.00	4.68		mg/L		93	75 - 125	2	20
Selenium	0.012	J	1.00	1.03		mg/L		102	75 - 125	5	20
Silver	ND		1.00	0.990		mg/L		99	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-563596/2-A
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563596

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 11:48	1

Lab Sample ID: LCS 240-563596/3-A
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563596

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.00500	0.00520		mg/L		104	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 240-563598/2-A
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:17	1

Lab Sample ID: LCS 240-563598/3-A
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00517		mg/L		103	80 - 120

Lab Sample ID: LB 240-563462/1-C
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563598

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 11:46	1

Lab Sample ID: 240-180954-1 MS
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: WC-SB2325-PELLETS & SOIL
Prep Type: TCLP
Prep Batch: 563598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.00522		mg/L		104	80 - 120

Lab Sample ID: 240-180954-1 MSD
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: WC-SB2325-PELLETS & SOIL
Prep Type: TCLP
Prep Batch: 563598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00486		mg/L		97	80 - 120	7	20

Lab Sample ID: LB 240-563463/1-C
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563598

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/27/23 14:00	02/28/23 12:15	1

Lab Sample ID: 240-180954-6 MS
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: WC-TW-7 (2-4)
Prep Type: TCLP
Prep Batch: 563598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.00517		mg/L		103	80 - 120

Lab Sample ID: 240-180954-6 MSD
Matrix: Solid
Analysis Batch: 563727

Client Sample ID: WC-TW-7 (2-4)
Prep Type: TCLP
Prep Batch: 563598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00536		mg/L		107	80 - 120	4	20

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-180954-7 DU
Matrix: Solid
Analysis Batch: 563584

Client Sample ID: WC-TW-6 (2-4)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Solids	77.5		76.5		%			20
Percent Moisture	22.5		23.5		%			20

Lab Sample ID: 240-180954-16 DU
Matrix: Solid
Analysis Batch: 563584

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Percent Solids	73.7		78.5		%		6	20
Percent Moisture	26.3		21.5		%		20	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

GC/MS VOA

Composite Batch: 563455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	Composite	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	Composite	
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	Composite	

Leach Batch: 563461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	563455
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	1311	563455
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	1311	563455
LB 240-563461/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 563488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8260D	563461
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	8260D	563461
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	8260D	563461
LB 240-563461/1-A MB	Method Blank	TCLP	Solid	8260D	563461
LCS 240-563488/12	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 563638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-2	WC-SB2636-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-4	WC-SB1252-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-5	WC-SB1841-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-6	WC-TW-7 (2-4)	Total/NA	Solid	5035	
240-180954-7	WC-TW-6 (2-4)	Total/NA	Solid	5035	
240-180954-8	WC-TW-5 (2-4)	Total/NA	Solid	5035	
240-180954-9	WC-TW-1 (4-6)	Total/NA	Solid	5035	
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	5035	
240-180954-11	WC-TW-3 (2-4)	Total/NA	Solid	5035	
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	5035	
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	5035	
240-180954-14	WC-TW-4 (2-4)	Total/NA	Solid	5035	
240-180954-15	WC-TW-10 (6-8)	Total/NA	Solid	5035	
MB 240-563638/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-563638/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	5035	
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	5035	

Analysis Batch: 563775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-2	WC-SB2636-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-4	WC-SB1252-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-5	WC-SB1841-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-6	WC-TW-7 (2-4)	Total/NA	Solid	8260D	563638
240-180954-7	WC-TW-6 (2-4)	Total/NA	Solid	8260D	563638
240-180954-8	WC-TW-5 (2-4)	Total/NA	Solid	8260D	563638

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

GC/MS VOA (Continued)

Analysis Batch: 563775 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-9	WC-TW-1 (4-6)	Total/NA	Solid	8260D	563638
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	8260D	563638
240-180954-11	WC-TW-3 (2-4)	Total/NA	Solid	8260D	563638
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	8260D	563638
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	8260D	563638
240-180954-14	WC-TW-4 (2-4)	Total/NA	Solid	8260D	563638
240-180954-15	WC-TW-10 (6-8)	Total/NA	Solid	8260D	563638
MB 240-563638/1-A	Method Blank	Total/NA	Solid	8260D	563638
LCS 240-563638/2-A	Lab Control Sample	Total/NA	Solid	8260D	563638
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	8260D	563638
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	8260D	563638

Prep Batch: 563777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	5035	
MB 240-563777/1-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 563784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	8260D	563777
MB 240-563777/1-A	Method Blank	Total/NA	Solid	8260D	563777
LCS 240-563784/4	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 563946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	8260D	563638
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	8260D	563638
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	8260D	563638

GC/MS Semi VOA

Composite Batch: 563455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	Composite	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	Composite	
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	Composite	

Leach Batch: 563462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	563455
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	1311	563455
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	1311	563455

Prep Batch: 563569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	3540C	
240-180954-2	WC-SB2636-PELLETS & SOIL	Total/NA	Solid	3540C	
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	3540C	
240-180954-4	WC-SB1252-PELLETS & SOIL	Total/NA	Solid	3540C	
240-180954-5	WC-SB1841-PELLETS & SOIL	Total/NA	Solid	3540C	
240-180954-6	WC-TW-7 (2-4)	Total/NA	Solid	3540C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

GC/MS Semi VOA (Continued)

Prep Batch: 563569 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-7	WC-TW-6 (2-4)	Total/NA	Solid	3540C	
240-180954-8	WC-TW-5 (2-4)	Total/NA	Solid	3540C	
240-180954-9	WC-TW-1 (4-6)	Total/NA	Solid	3540C	
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	3540C	
240-180954-11	WC-TW-3 (2-4)	Total/NA	Solid	3540C	
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	3540C	
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	3540C	
240-180954-14	WC-TW-4 (2-4)	Total/NA	Solid	3540C	
240-180954-15	WC-TW-10 (6-8)	Total/NA	Solid	3540C	
MB 240-563569/23-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-563569/24-A	Lab Control Sample	Total/NA	Solid	3540C	
LCS 240-563569/25-A	Lab Control Sample	Total/NA	Solid	3540C	

Prep Batch: 563671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	3510C	563462
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	3510C	563462
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	3510C	563462
MB 240-563671/6-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563671/7-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 563825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	8270E	563569
240-180954-2	WC-SB2636-PELLETS & SOIL	Total/NA	Solid	8270E	563569
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	8270E	563569
240-180954-4	WC-SB1252-PELLETS & SOIL	Total/NA	Solid	8270E	563569
240-180954-5	WC-SB1841-PELLETS & SOIL	Total/NA	Solid	8270E	563569
240-180954-9	WC-TW-1 (4-6)	Total/NA	Solid	8270E	563569
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	8270E	563569
240-180954-11	WC-TW-3 (2-4)	Total/NA	Solid	8270E	563569
MB 240-563569/23-A	Method Blank	Total/NA	Solid	8270E	563569
LCS 240-563569/24-A	Lab Control Sample	Total/NA	Solid	8270E	563569
LCS 240-563569/25-A	Lab Control Sample	Total/NA	Solid	8270E	563569

Analysis Batch: 563967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8270E	563671
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	8270E	563671
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	8270E	563671
MB 240-563671/6-A	Method Blank	Total/NA	Solid	8270E	563671
LCS 240-563671/7-A	Lab Control Sample	Total/NA	Solid	8270E	563671

Analysis Batch: 563984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-14	WC-TW-4 (2-4)	Total/NA	Solid	8270E	563569
240-180954-15	WC-TW-10 (6-8)	Total/NA	Solid	8270E	563569

Analysis Batch: 564110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-6	WC-TW-7 (2-4)	Total/NA	Solid	8270E	563569

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

GC/MS Semi VOA (Continued)

Analysis Batch: 564110 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-7	WC-TW-6 (2-4)	Total/NA	Solid	8270E	563569
240-180954-8	WC-TW-5 (2-4)	Total/NA	Solid	8270E	563569
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	8270E	563569
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	8270E	563569

GC Semi VOA

Leach Batch: 348685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	1311	
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	1311	
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	
240-180954-16 MSD	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	

Prep Batch: 349322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	348685
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	8151A	348685
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	8151A	348685
MB 410-349322/2-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-349322/3-A	Lab Control Sample	Total/NA	Solid	8151A	
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	348685
240-180954-16 MSD	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	348685

Analysis Batch: 349396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	349322
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	8151A	349322
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	8151A	349322
MB 410-349322/2-A	Method Blank	Total/NA	Solid	8151A	349322
LCS 410-349322/3-A	Lab Control Sample	Total/NA	Solid	8151A	349322
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	349322
240-180954-16 MSD	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8151A	349322

Composite Batch: 563454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	Composite	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Composite	
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	Composite	

Composite Batch: 563455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	Composite	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	Composite	
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	Composite	
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	Composite	

Leach Batch: 563462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	563455

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

GC Semi VOA (Continued)

Leach Batch: 563462 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	1311	563455
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	1311	563455
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	1311	563455

Prep Batch: 563578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	3546	563454
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	3546	563454
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	3546	563454
MB 240-563578/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-563578/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 563676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	3510C	563462
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	3510C	563462
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	3510C	563462
MB 240-563676/5-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-563676/6-A	Lab Control Sample	Total/NA	Solid	3510C	
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	3510C	563462

Analysis Batch: 563699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	8082A	563578
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	8082A	563578
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	8082A	563578
MB 240-563578/1-A	Method Blank	Total/NA	Solid	8082A	563578
LCS 240-563578/2-A	Lab Control Sample	Total/NA	Solid	8082A	563578

Analysis Batch: 563710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8081B	563676
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	TCLP	Solid	8081B	563676
240-180954-18	WC-PELLETS & SOIL-COMP	TCLP	Solid	8081B	563676
MB 240-563676/5-A	Method Blank	Total/NA	Solid	8081B	563676
LCS 240-563676/6-A	Lab Control Sample	Total/NA	Solid	8081B	563676
240-180954-16 MS	WC-TW-COMP (TW-1 THRU TW-5)	TCLP	Solid	8081B	563676

LCMS

Prep Batch: 348895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 (mod)	
MB 410-348895/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-348895/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	
240-180954-17 MS	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 (mod)	
240-180954-17 MSD	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 (mod)	

Cleanup Batch: 348901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Extract Aliquot	348895

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

LCMS (Continued)

Cleanup Batch: 348901 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-348895/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	348895
LCS 410-348895/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	348895
240-180954-17 MS	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Extract Aliquot	348895
240-180954-17 MSD	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Extract Aliquot	348895

Analysis Batch: 349425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 IDA	348901
MB 410-348895/1-B	Method Blank	Total/NA	Solid	537 IDA	348901
LCS 410-348895/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	348901
240-180954-17 MS	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 IDA	348901
240-180954-17 MSD	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	537 IDA	348901

Metals

Leach Batch: 563462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	TCLP	Solid	1311	
240-180954-2	WC-SB2636-PELLETS & SOIL	TCLP	Solid	1311	
240-180954-3	WC-SB1855-PELLETS & SOIL	TCLP	Solid	1311	
240-180954-4	WC-SB1252-PELLETS & SOIL	TCLP	Solid	1311	
240-180954-5	WC-SB1841-PELLETS & SOIL	TCLP	Solid	1311	
LB 240-563462/1-B	Method Blank	TCLP	Solid	1311	
LB 240-563462/1-C	Method Blank	TCLP	Solid	1311	
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	TCLP	Solid	1311	
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	TCLP	Solid	1311	

Leach Batch: 563463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-6	WC-TW-7 (2-4)	TCLP	Solid	1311	
240-180954-7	WC-TW-6 (2-4)	TCLP	Solid	1311	
240-180954-8	WC-TW-5 (2-4)	TCLP	Solid	1311	
240-180954-9	WC-TW-1 (4-6)	TCLP	Solid	1311	
240-180954-10	WC-TW-9 (8-10)	TCLP	Solid	1311	
240-180954-11	WC-TW-3 (2-4)	TCLP	Solid	1311	
240-180954-12	WC-TW-8 (6-8)	TCLP	Solid	1311	
240-180954-13	WC-TW-2 (2-4)	TCLP	Solid	1311	
240-180954-14	WC-TW-4 (2-4)	TCLP	Solid	1311	
240-180954-15	WC-TW-10 (6-8)	TCLP	Solid	1311	
LB 240-563463/1-B	Method Blank	TCLP	Solid	1311	
LB 240-563463/1-C	Method Blank	TCLP	Solid	1311	
240-180954-6 MS	WC-TW-7 (2-4)	TCLP	Solid	1311	
240-180954-6 MSD	WC-TW-7 (2-4)	TCLP	Solid	1311	

Prep Batch: 563594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	TCLP	Solid	3010A	563462
240-180954-2	WC-SB2636-PELLETS & SOIL	TCLP	Solid	3010A	563462
240-180954-3	WC-SB1855-PELLETS & SOIL	TCLP	Solid	3010A	563462
240-180954-4	WC-SB1252-PELLETS & SOIL	TCLP	Solid	3010A	563462
240-180954-5	WC-SB1841-PELLETS & SOIL	TCLP	Solid	3010A	563462

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Metals (Continued)

Prep Batch: 563594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-563462/1-B	Method Blank	TCLP	Solid	3010A	563462
MB 240-563594/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563594/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	TCLP	Solid	3010A	563462
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	TCLP	Solid	3010A	563462

Prep Batch: 563596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563462
240-180954-2	WC-SB2636-PELLETS & SOIL	TCLP	Solid	7470A	563462
240-180954-3	WC-SB1855-PELLETS & SOIL	TCLP	Solid	7470A	563462
240-180954-4	WC-SB1252-PELLETS & SOIL	TCLP	Solid	7470A	563462
240-180954-5	WC-SB1841-PELLETS & SOIL	TCLP	Solid	7470A	563462
LB 240-563462/1-C	Method Blank	TCLP	Solid	7470A	563462
MB 240-563596/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-563596/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563462
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563462

Prep Batch: 563597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-6	WC-TW-7 (2-4)	TCLP	Solid	3010A	563463
240-180954-7	WC-TW-6 (2-4)	TCLP	Solid	3010A	563463
240-180954-8	WC-TW-5 (2-4)	TCLP	Solid	3010A	563463
240-180954-9	WC-TW-1 (4-6)	TCLP	Solid	3010A	563463
240-180954-10	WC-TW-9 (8-10)	TCLP	Solid	3010A	563463
240-180954-11	WC-TW-3 (2-4)	TCLP	Solid	3010A	563463
240-180954-12	WC-TW-8 (6-8)	TCLP	Solid	3010A	563463
240-180954-13	WC-TW-2 (2-4)	TCLP	Solid	3010A	563463
240-180954-14	WC-TW-4 (2-4)	TCLP	Solid	3010A	563463
240-180954-15	WC-TW-10 (6-8)	TCLP	Solid	3010A	563463
LB 240-563463/1-B	Method Blank	TCLP	Solid	3010A	563463
MB 240-563597/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-563597/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-180954-6 MS	WC-TW-7 (2-4)	TCLP	Solid	3010A	563463
240-180954-6 MSD	WC-TW-7 (2-4)	TCLP	Solid	3010A	563463

Prep Batch: 563598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-6	WC-TW-7 (2-4)	TCLP	Solid	7470A	563463
240-180954-7	WC-TW-6 (2-4)	TCLP	Solid	7470A	563463
240-180954-8	WC-TW-5 (2-4)	TCLP	Solid	7470A	563463
240-180954-9	WC-TW-1 (4-6)	TCLP	Solid	7470A	563463
240-180954-10	WC-TW-9 (8-10)	TCLP	Solid	7470A	563463
240-180954-11	WC-TW-3 (2-4)	TCLP	Solid	7470A	563463
240-180954-12	WC-TW-8 (6-8)	TCLP	Solid	7470A	563463
240-180954-13	WC-TW-2 (2-4)	TCLP	Solid	7470A	563463
240-180954-14	WC-TW-4 (2-4)	TCLP	Solid	7470A	563463
240-180954-15	WC-TW-10 (6-8)	TCLP	Solid	7470A	563463
LB 240-563463/1-C	Method Blank	TCLP	Solid	7470A	563463
MB 240-563598/2-A	Method Blank	Total/NA	Solid	7470A	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Metals (Continued)

Prep Batch: 563598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-563598/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-180954-6 MS	WC-TW-7 (2-4)	TCLP	Solid	7470A	563463
240-180954-6 MSD	WC-TW-7 (2-4)	TCLP	Solid	7470A	563463

Analysis Batch: 563727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-2	WC-SB2636-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-3	WC-SB1855-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-4	WC-SB1252-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-5	WC-SB1841-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-6	WC-TW-7 (2-4)	TCLP	Solid	7470A	563598
240-180954-7	WC-TW-6 (2-4)	TCLP	Solid	7470A	563598
240-180954-8	WC-TW-5 (2-4)	TCLP	Solid	7470A	563598
240-180954-9	WC-TW-1 (4-6)	TCLP	Solid	7470A	563598
240-180954-10	WC-TW-9 (8-10)	TCLP	Solid	7470A	563598
240-180954-11	WC-TW-3 (2-4)	TCLP	Solid	7470A	563598
240-180954-12	WC-TW-8 (6-8)	TCLP	Solid	7470A	563598
240-180954-13	WC-TW-2 (2-4)	TCLP	Solid	7470A	563598
240-180954-14	WC-TW-4 (2-4)	TCLP	Solid	7470A	563598
240-180954-15	WC-TW-10 (6-8)	TCLP	Solid	7470A	563598
LB 240-563462/1-C	Method Blank	TCLP	Solid	7470A	563596
LB 240-563463/1-C	Method Blank	TCLP	Solid	7470A	563598
MB 240-563596/2-A	Method Blank	Total/NA	Solid	7470A	563596
MB 240-563598/2-A	Method Blank	Total/NA	Solid	7470A	563598
LCS 240-563596/3-A	Lab Control Sample	Total/NA	Solid	7470A	563596
LCS 240-563598/3-A	Lab Control Sample	Total/NA	Solid	7470A	563598
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	TCLP	Solid	7470A	563596
240-180954-6 MS	WC-TW-7 (2-4)	TCLP	Solid	7470A	563598
240-180954-6 MSD	WC-TW-7 (2-4)	TCLP	Solid	7470A	563598

Analysis Batch: 563911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-2	WC-SB2636-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-3	WC-SB1855-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-4	WC-SB1252-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-5	WC-SB1841-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-6	WC-TW-7 (2-4)	TCLP	Solid	6010D	563597
240-180954-7	WC-TW-6 (2-4)	TCLP	Solid	6010D	563597
240-180954-8	WC-TW-5 (2-4)	TCLP	Solid	6010D	563597
240-180954-9	WC-TW-1 (4-6)	TCLP	Solid	6010D	563597
240-180954-10	WC-TW-9 (8-10)	TCLP	Solid	6010D	563597
240-180954-11	WC-TW-3 (2-4)	TCLP	Solid	6010D	563597
240-180954-12	WC-TW-8 (6-8)	TCLP	Solid	6010D	563597
240-180954-13	WC-TW-2 (2-4)	TCLP	Solid	6010D	563597
240-180954-14	WC-TW-4 (2-4)	TCLP	Solid	6010D	563597
240-180954-15	WC-TW-10 (6-8)	TCLP	Solid	6010D	563597
LB 240-563462/1-B	Method Blank	TCLP	Solid	6010D	563594
LB 240-563463/1-B	Method Blank	TCLP	Solid	6010D	563597

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Metals (Continued)

Analysis Batch: 563911 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563594/2-A	Method Blank	Total/NA	Solid	6010D	563594
MB 240-563597/2-A	Method Blank	Total/NA	Solid	6010D	563597
LCS 240-563594/3-A	Lab Control Sample	Total/NA	Solid	6010D	563594
LCS 240-563597/3-A	Lab Control Sample	Total/NA	Solid	6010D	563597
240-180954-1 MS	WC-SB2325-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-1 MSD	WC-SB2325-PELLETS & SOIL	TCLP	Solid	6010D	563594
240-180954-6 MS	WC-TW-7 (2-4)	TCLP	Solid	6010D	563597
240-180954-6 MSD	WC-TW-7 (2-4)	TCLP	Solid	6010D	563597

General Chemistry

Analysis Batch: 380370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	1030	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	1030	
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	1030	

Composite Batch: 563454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	Composite	
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Composite	
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	Composite	
240-180954-16 DU	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	Composite	

Analysis Batch: 563584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-1	WC-SB2325-PELLETS & SOIL	Total/NA	Solid	Moisture	
240-180954-2	WC-SB2636-PELLETS & SOIL	Total/NA	Solid	Moisture	
240-180954-3	WC-SB1855-PELLETS & SOIL	Total/NA	Solid	Moisture	
240-180954-4	WC-SB1252-PELLETS & SOIL	Total/NA	Solid	Moisture	
240-180954-5	WC-SB1841-PELLETS & SOIL	Total/NA	Solid	Moisture	
240-180954-6	WC-TW-7 (2-4)	Total/NA	Solid	Moisture	
240-180954-7	WC-TW-6 (2-4)	Total/NA	Solid	Moisture	
240-180954-8	WC-TW-5 (2-4)	Total/NA	Solid	Moisture	
240-180954-9	WC-TW-1 (4-6)	Total/NA	Solid	Moisture	
240-180954-10	WC-TW-9 (8-10)	Total/NA	Solid	Moisture	
240-180954-11	WC-TW-3 (2-4)	Total/NA	Solid	Moisture	
240-180954-12	WC-TW-8 (6-8)	Total/NA	Solid	Moisture	
240-180954-13	WC-TW-2 (2-4)	Total/NA	Solid	Moisture	
240-180954-14	WC-TW-4 (2-4)	Total/NA	Solid	Moisture	
240-180954-15	WC-TW-10 (6-8)	Total/NA	Solid	Moisture	
240-180954-16	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	Moisture	563454
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	Moisture	563454
240-180954-18	WC-PELLETS & SOIL-COMP	Total/NA	Solid	Moisture	563454
240-180954-7 DU	WC-TW-6 (2-4)	Total/NA	Solid	Moisture	
240-180954-16 DU	WC-TW-COMP (TW-1 THRU TW-5)	Total/NA	Solid	Moisture	563454

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563594	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 06:10
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563596	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 11:52
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-SB2325-PELLETS & SOIL

Lab Sample ID: 240-180954-1

Date Collected: 02/25/23 16:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 95.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 16:55
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		1	563825	JMG	EET CAN	03/01/23 16:11

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563594	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 06:32
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563596	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:04
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-SB2636-PELLETS & SOIL

Lab Sample ID: 240-180954-2

Date Collected: 02/25/23 17:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 18:03
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		1	563825	JMG	EET CAN	03/01/23 15:47

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563594	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 06:36
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563596	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:06
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-SB1855-PELLETS & SOIL

Lab Sample ID: 240-180954-3

Date Collected: 02/25/23 17:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 96.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563777	LAM	EET CAN	02/26/23 10:31
Total/NA	Analysis	8260D		1	563784	CS	EET CAN	02/28/23 19:10
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 18:25
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		1	563825	JMG	EET CAN	03/01/23 16:36

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563594	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 06:41
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563596	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:08
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-SB1252-PELLETS & SOIL

Lab Sample ID: 240-180954-4

Date Collected: 02/25/23 17:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 18:46
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		1	563825	JMG	EET CAN	03/01/23 17:00

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563594	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 06:54
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563596	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:11
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-SB1841-PELLETS & SOIL

Lab Sample ID: 240-180954-5

Date Collected: 02/25/23 17:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 92.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 19:07
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		1	563825	JMG	EET CAN	03/01/23 17:25

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 07:15
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:21
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-7 (2-4)

Lab Sample ID: 240-180954-6

Date Collected: 02/25/23 10:20

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 19:29
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		5	564110	JMG	EET CAN	03/03/23 13:48

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 07:45
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:33
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-6 (2-4)

Lab Sample ID: 240-180954-7

Date Collected: 02/25/23 10:15

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 19:50
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		10	564110	JMG	EET CAN	03/03/23 13:24

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 07:50
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:36
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-5 (2-4)

Lab Sample ID: 240-180954-8

Date Collected: 02/25/23 10:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 20:11
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		20	564110	JMG	EET CAN	03/03/23 11:11

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 07:54
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:38
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-1 (4-6)

Lab Sample ID: 240-180954-9

Date Collected: 02/25/23 09:30

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 20:32
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		10	563825	JMG	EET CAN	03/01/23 18:38

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 07:59
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:40
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-9 (8-10)

Lab Sample ID: 240-180954-10

Date Collected: 02/25/23 10:35

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 78.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563946	CS	EET CAN	03/02/23 00:56
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		50	563775	CS	EET CAN	02/28/23 20:54
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		5	563825	JMG	EET CAN	03/01/23 19:02

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 08:03
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:42
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-3 (2-4)

Lab Sample ID: 240-180954-11

Date Collected: 02/25/23 09:55

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 21:15
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		2.5	563825	JMG	EET CAN	03/01/23 18:14

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 08:08
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:44
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-8 (6-8)

Lab Sample ID: 240-180954-12

Date Collected: 02/25/23 10:25

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563946	CS	EET CAN	03/02/23 01:20
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		10	563775	CS	EET CAN	02/28/23 21:36
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		10	564110	JMG	EET CAN	03/03/23 12:59

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 08:12
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:46
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-2 (2-4)

Lab Sample ID: 240-180954-13

Date Collected: 02/25/23 09:45

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563946	CS	EET CAN	03/02/23 01:43
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		10	563775	CS	EET CAN	02/28/23 21:57
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		2	564110	JMG	EET CAN	03/03/23 14:13

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 08:17
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:48
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-4 (2-4)

Lab Sample ID: 240-180954-14

Date Collected: 02/25/23 10:05

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 75.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 22:19
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		5	563984	JMG	EET CAN	03/02/23 20:47

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3010A			563597	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	6010D		1	563911	RKT	EET CAN	03/01/23 08:22
TCLP	Leach	1311			563463	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	7470A			563598	AJC	EET CAN	02/27/23 14:00
TCLP	Analysis	7470A		1	563727	MRL	EET CAN	02/28/23 12:50
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-10 (6-8)

Lab Sample ID: 240-180954-15

Date Collected: 02/25/23 11:10

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			563638	LAM	EET CAN	02/27/23 17:21
Total/NA	Analysis	8260D		1	563775	CS	EET CAN	02/28/23 22:40
Total/NA	Prep	3540C			563569	BMB	EET CAN	02/27/23 11:53
Total/NA	Analysis	8270E		5	563984	JMG	EET CAN	03/02/23 21:11

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563461	DRJ	EET CAN	02/26/23 15:45 - 02/27/23 08:25 ¹
TCLP	Analysis	8260D		1	563488	AJS	EET CAN	02/27/23 13:38
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563671	SDE	EET CAN	02/28/23 07:25
TCLP	Analysis	8270E		1	563967	MRU	EET CAN	03/02/23 13:12
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563676	SDE	EET CAN	02/28/23 07:30
TCLP	Analysis	8081B		1	563710	BPM	EET CAN	02/28/23 14:14
TCLP	Leach	1311			348685	UNWS	ELLE	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	8151A			349322	K2IL	ELLE	03/01/23 19:30
TCLP	Analysis	8151A		1	349396	UAMZ	ELLE	03/02/23 07:04
Total/NA	Analysis	1030		1	380370	WZC8	EET CF	03/02/23 13:36
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-TW-COMP (TW-1 THRU TW-5)

Lab Sample ID: 240-180954-16

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 73.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Prep	3546			563578	AJ	EET CAN	02/27/23 12:32
Total/NA	Analysis	8082A		1	563699	RR	EET CAN	02/28/23 19:16

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563461	DRJ	EET CAN	02/26/23 15:45 - 02/27/23 08:25 ¹
TCLP	Analysis	8260D		1	563488	AJS	EET CAN	02/27/23 14:01
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563671	SDE	EET CAN	02/28/23 07:25
TCLP	Analysis	8270E		1	563967	MRU	EET CAN	03/02/23 13:39
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563676	SDE	EET CAN	02/28/23 07:30
TCLP	Analysis	8081B		1	563710	BPM	EET CAN	02/28/23 14:49
TCLP	Leach	1311			348685	UNWS	ELLE	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	8151A			349322	K2IL	ELLE	03/01/23 19:30
TCLP	Analysis	8151A		1	349396	UAMZ	ELLE	03/02/23 07:32
Total/NA	Analysis	1030		1	380370	WZC8	EET CF	03/02/23 13:36
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Prep	3546			563578	AJ	EET CAN	02/27/23 12:32
Total/NA	Analysis	8082A		1	563699	RR	EET CAN	02/28/23 19:32
Total/NA	Prep	537 (mod)			348895	U5HI	ELLE	02/28/23 19:41
Total/NA	Cleanup	Extract Aliquot			348901	U5HI	ELLE	02/28/23 20:02
Total/NA	Analysis	537 IDA		1	349425	PY4D	ELLE	03/02/23 21:12

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563461	DRJ	EET CAN	02/26/23 15:45 - 02/27/23 08:25 ¹
TCLP	Analysis	8260D		1	563488	AJS	EET CAN	02/27/23 14:25
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563671	SDE	EET CAN	02/28/23 07:25
TCLP	Analysis	8270E		1	563967	MRU	EET CAN	03/02/23 14:05
TCLP	Composite	Composite			563455	DRJ	EET CAN	02/26/23 11:00
TCLP	Leach	1311			563462	DRJ	EET CAN	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	3510C			563676	SDE	EET CAN	02/28/23 07:30
TCLP	Analysis	8081B		1	563710	BPM	EET CAN	02/28/23 15:06
TCLP	Leach	1311			348685	UNWS	ELLE	02/26/23 16:35 - 02/27/23 08:40 ¹
TCLP	Prep	8151A			349322	K2IL	ELLE	03/01/23 19:30
TCLP	Analysis	8151A		1	349396	UAMZ	ELLE	03/02/23 07:59
Total/NA	Analysis	1030		1	380370	WZC8	EET CF	03/02/23 13:36
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Analysis	Moisture		1	563584	JMB	EET CAN	02/27/23 13:12

Client Sample ID: WC-PELLETS & SOIL-COMP

Lab Sample ID: 240-180954-18

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			563454	DRJ	EET CAN	02/26/23 11:00
Total/NA	Prep	3546			563578	AJ	EET CAN	02/27/23 12:32
Total/NA	Analysis	8082A		1	563699	RR	EET CAN	02/28/23 19:49

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-23
Georgia	State	IA100001 (OR)	09-29-23
Illinois	NELAP	200024	11-29-23
Iowa	State	007	12-01-23
Kansas	NELAP	E-10341	01-31-24
Minnesota	NELAP	019-999-319	12-31-23
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-23
Oregon	NELAP	IA100001	09-29-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Chain of Custody Record

644927



Environment Testing
America

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact
 Company Name: Arcadis
 Address: 4065 Cornell Rd, Ste 200
 City/State/Zip: Cincinnati, OH 45241
 Phone: _____
 Fax: _____
 Project Name: NS ER
 Site: East Fairstone, OH
 P O #: 24030745

Project Manager: Jason Artrip
 Tell/Email: Jason.Artrip@arcadis.com
 Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below: RUSH
 2 weeks ASAP
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS/MSD (Y/N)		Sample Specific Notes
						Total VOCs	Total SVOCs	TCP Metals	PEAS/PFOA	
WC-TW-2(2-4)	2/25/23	0945	G	S	8	N	N	X	X	
WC-TW-4(2-4)	2/25/23	1005	G	S	8	N	N	X	X	
WC-TW-10(6-8)	2/25/23	1110	G	S	8	N	N	X	X	
WC-TW-COMP (TW-1 thro TW-5)	2/25/23		C	S				X	X	
WC-TW-COMP (TW-6 thro TW-10)	2/25/23		C	S				X	X	
WC Pellets & Soil - COMP	2/25/23		C	S				X	X	all pellets & soils grab

Site Contact: Carlyn Brown Date: 2/25/23 COC No: 2 of 2 COCs
 Lab Contact: Michael Dalton Carrier: Lab/Other
 Sampler: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____
 Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
See email from Justin Gaudin

Custody Seal No.: _____
 Relinquished by: Jason Artrip Date/Time: 2/25/23 6:30
 Relinquished by: Jason Artrip Date/Time: 2/25/23 6:30
 Relinquished by: _____ Date/Time: _____

Received by: Jason Artrip Date/Time: 2/25/23 6:30
 Received by: Jason Artrip Date/Time: 2/25/23 6:30
 Received in Laboratory by: _____ Date/Time: _____



Barberton Facility

Client Arundis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-25-23 Opened on 2-26-23

JME

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. 1.7 °C Corrected Cooler Temp. 1.4 °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
 - If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? Yes No NA larger than this.
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by:

One 8oz bottle for sample WC-SB2636 - Pellets and Soil was broken during Unpacking. (JME) 2-26-23

19. SAMPLE CONDITION Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

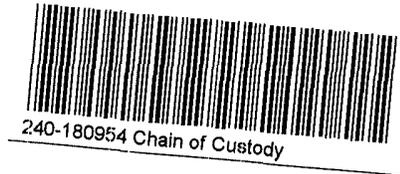
20. SAMPLE PRESERVATION Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



Environment Testing
America



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Canton</u>			
City/State:	CITY	STATE	Project:
		<u>OH</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>2-28-23</u>	<u>930</u>	<u>ML</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>U</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): _____		Corrected Temp (°C): _____	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>402 jar</u>		
Uncorrected Temp (°C):	<u>3.1</u>		
Corrected Temp (°C):	<u>3.1</u>		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler	Lab PM:	Center Tracking No(s):	COC No:
Eurofins Environment Testing North Center		DelMonico, Michael	240-164393 1	State of Origin:	240-180954-1
3019 Venture Way,		E-Mail:	Michael.DelMonico@et.eurofins.com	Page 1 of 1	
City: Cedar Falls		Accreditations Required (See note):			
State, Zip: IA, 50613		Analysis Requested:			
Phone: 319-277-2401(Tel) 319-277-2425(Fax)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)			
Email:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:			
Project Name: NSEP - Privileged & Confidential		Preservation Codes:			
Site:		Total Number of Containers			
Due Date Requested: 3/4/2023		1030 Screen/Ignitability (Prelim Screen Test)			
TAT Requested (days):		1030 Ignitability (Burn Rate)			
PO #:		Perform MS/MSD (Yes or No)			
WO #:		Field Filtered Sample (Yes or No)			
Project #: 24030745		Matrix			
SSOW#:		(W=water, S=solid, O=volatile, BT=Trace, A=Air)			
Sample Date		Sample Time		Sample Type (C=comp, G=grab)	
Sample Date		Sample Time		Preservation Code	
2/25/23		Eastern		Solid	
2/25/23		Eastern		Solid	
2/25/23		Eastern		Solid	
WC-TW-COMP (TW-1 THRU TW-5) (240-180954-16)					
WC-TW-COMP (TW-6 THRU TW-10) (240-180954-17)					
WC-PELLETS & SOIL-COMP (240-180954-18)					
Special Instructions/Note:					
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/mainx being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other; instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.					
Possible Hazard Identification					
Unconfirmed					
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements					
Empty Kit Relinquished by _____ Date _____ Method of Shipment: _____					
Relinquished by _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____					
Relinquished by _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____					
Relinquished by _____ Date/Time: _____ Received by: _____ Date/Time: _____ Company: _____					
Custody Seals Intact: _____ Custody Seal No _____					
Cooler Temperature(s) °C and Other Remarks: _____					



Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180954-1

Login Number: 180954

List Number: 3

Creator: Costello, Mackenzie K

List Source: Eurofins Cedar Falls

List Creation: 02/28/23 10:09 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180954-1

Login Number: 180954

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/28/23 10:55 AM

Creator: Ballard, Megan

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		C8PFOA (26-159)	C8PFOS (41-154)
240-180954-17	WC-TW-COMP (TW-6 THRU TV	85	88
240-180954-17 MS	WC-TW-COMP (TW-6 THRU TW-10)	92	95
240-180954-17 MSD	WC-TW-COMP (TW-6 THRU TW-10)	83	90
LCS 410-348895/2-B	Lab Control Sample	95	92
MB 410-348895/1-B	Method Blank	89	94

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/10/2023 9:33:55 AM Revision 1

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180954-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/10/2023 9:33:55 AM
Revision 1

Authorized for release by
Michael DelMonico, Project Manager I
Michael.DelMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	10
QC Association Summary	12
Lab Chronicle	13
Certification Summary	14
Chain of Custody	16
Receipt Checklists	19
Isotope Dilution Summary	20

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Job ID: 240-180954-2

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-180954-2**

Receipt

The samples were received on 2/26/2023 8:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

Report revised on 3/10/2023 to report Total Dioxins calculations.

Dioxin

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Solid	02/25/23 00:00	02/26/23 20:20

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-2

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	140		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	83		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	5.2	J	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	13		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	5.9	J	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	8.2		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	11		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	5.6	J I	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	7.8		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	5.1	J I	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	3.2	J	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	9.7		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	14		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	1.7		1.3	0.26	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	3.8		1.3	0.26	ng/Kg	1	✳	8290A	Total/NA
OCDD	1500		13	2.6	ng/Kg	1	✳	8290A	Total/NA
OCDF	110		13	2.6	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	83	I	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	130	I	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	310		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	180		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	34	I	6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	91		6.5	2.6	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	30	I	1.3	0.26	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	86	I	1.3	0.26	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.4

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	140		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,4,6,7,8-HpCDF	83		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,4,7,8-HxCDD	5.2	J	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,4,7,8-HxCDF	13		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,4,7,8,9-HpCDF	5.9	J	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,6,7,8-HxCDD	8.2		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,6,7,8-HxCDF	11		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,7,8-PeCDD	5.6	J I	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,7,8-PeCDF	7.8		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,7,8,9-HxCDD	5.1	J I	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
1,2,3,7,8,9-HxCDF	3.2	J	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
2,3,4,6,7,8-HxCDF	9.7		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
2,3,4,7,8-PeCDF	14		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
2,3,7,8-TCDD	1.7		1.3	0.26	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
2,3,7,8-TCDF	3.8		1.3	0.26	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
OCDD	1500		13	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
OCDF	110		13	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total HxCDD	83	I	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total HxCDF	130	I	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total HpCDD	310		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total HpCDF	180		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total PeCDD	34	I	6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total PeCDF	91		6.5	2.6	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total TCDD	30	I	1.3	0.26	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1
Total TCDF	86	I	1.3	0.26	ng/Kg	✳	03/06/23 12:43	03/08/23 03:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	49		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-OCDD	50		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-2,3,7,8-TCDF	54		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-2,3,7,8-TCDD	49		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-2,3,4,7,8-PeCDF	50		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-2,3,4,6,7,8-HxCDF	52		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,7,8,9-HxCDF	53		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,7,8,9-HxCDD	51		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,7,8-PeCDF	48		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,7,8-PeCDD	48		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,6,7,8-HxCDF	54		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,6,7,8-HxCDD	50		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,4,7,8,9-HpCDF	53		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,4,7,8-HxCDF	53		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,4,7,8-HxCDD	51		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,4,6,7,8-HpCDF	51		40 - 135	03/06/23 12:43	03/08/23 03:40	1
13C-1,2,3,4,6,7,8-HpCDD	53		40 - 135	03/06/23 12:43	03/08/23 03:40	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-350542/1-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 350542

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,6,7,8-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,4,7,8,9-HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
1,2,3,7,8,9-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,6,7,8-HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,4,7,8-PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
2,3,7,8-TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDD	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
OCDF	ND		10	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HxCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total HpCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDD	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total PeCDF	ND		5.0	2.0	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDD	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1
Total TCDF	ND		1.0	0.20	ng/Kg		03/06/23 12:43	03/07/23 19:03	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	89		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-OCDD	88		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,7,8-TCDD	68		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-2,3,4,6,7,8-HxCDF	81		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDF	82		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8,9-HxCDD	83		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDF	72		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,7,8-PeCDD	69		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,6,7,8-HxCDD	80		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8,9-HpCDF	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,7,8-HxCDD	78		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/06/23 12:43	03/07/23 19:03	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	03/06/23 12:43	03/07/23 19:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-350542/2-A
Matrix: Solid
Analysis Batch: 350921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 350542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDD	100	93.6		ng/Kg		94	77 - 127
1,2,3,4,6,7,8-HpCDF	100	94.3		ng/Kg		94	77 - 127
1,2,3,4,7,8-HxCDD	100	98.7		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDF	100	97.8		ng/Kg		98	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.8		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	103		ng/Kg		103	76 - 127
1,2,3,6,7,8-HxCDF	100	97.3		ng/Kg		97	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	101		ng/Kg		101	75 - 129
1,2,3,7,8,9-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,7,8,9-HxCDF	100	97.4		ng/Kg		97	76 - 126
2,3,4,6,7,8-HxCDF	100	94.2		ng/Kg		94	78 - 128
2,3,4,7,8-PeCDF	100	104		ng/Kg		104	75 - 131
2,3,7,8-TCDD	20.0	19.9		ng/Kg		99	68 - 142
2,3,7,8-TCDF	20.0	17.7		ng/Kg		88	70 - 133
OCDD	200	202		ng/Kg		101	77 - 125
OCDF	200	199		ng/Kg		99	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	91		40 - 135
13C-OCDD	92		40 - 135
13C-2,3,7,8-TCDF	75		40 - 135
13C-2,3,7,8-TCDD	72		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-2,3,4,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDF	87		40 - 135
13C-1,2,3,7,8,9-HxCDD	89		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,6,7,8-HxCDF	87		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	92		40 - 135
13C-1,2,3,4,7,8-HxCDF	83		40 - 135
13C-1,2,3,4,7,8-HxCDD	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	91		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	90		40 - 135

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Specialty Organics

Prep Batch: 350542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-350542/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 350921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-350542/1-A	Method Blank	Total/NA	Solid	8290A	350542
LCS 410-350542/2-A	Lab Control Sample	Total/NA	Solid	8290A	350542

Analysis Batch: 351132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180954-17	WC-TW-COMP (TW-6 THRU TW-10)	Total/NA	Solid	8290A	350542

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Client Sample ID: WC-TW-COMP (TW-6 THRU TW-10)

Lab Sample ID: 240-180954-17

Date Collected: 02/25/23 00:00

Matrix: Solid

Date Received: 02/26/23 20:20

Percent Solids: 76.4

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	HRMS-Soxtherm			350542	RGA5	ELLE	03/06/23 12:43
Total/NA	Analysis	8290A		1	351132	DZ6A	ELLE	03/08/23 03:40

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180954-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Address: Arcadis
 4605 Cornwell Rd, Ste 200
 Cincinnati, OH 45241

Chain of Custody Record

644926



Environment Testing
 America

1.7 / 1.4

Regulatory Program: DW NPDES RCRA Other: _____

TAL-8210

Client Contact		Project Manager: Jason Artrip		Site Contact: Carolyn Grodzinski		COC No: 1 of 1 COCs	
Company Name: Arcadis		Tel/Email: Jason.Artrip@arcadis.com		Date: 2/25/23		Sampler: _____	
Address: 4605 Cornwell Rd, Ste 200		Analysis Turnaround Time		Site Address: 1400 Lounger		For Lab Use Only:	
City/State/Zip: Cincinnati, OH 45241		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Contact: _____		Walk-in Client: _____	
Phone: _____		TAT if different from Below		Perform MS/MSD (Y/N)		Lab Sampling: _____	
Fax: _____		2 weeks <input type="checkbox"/>		Total VOCs		Job / SDG No.: _____	
Project Name: NS ER		1 week <input type="checkbox"/>		Total SVOCs		Sample Specific Notes:	
Site: East Parkstone		2 days <input type="checkbox"/>		Total PCBs			
P O # 240-35745		1 day <input type="checkbox"/>		Total Pesticides			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Other
WC-SB2325 - Pellets & Soil	2/25/23	1645	G	S	8	NN	
WC-SB2636 - Pellets & Soil	2/25/23	1730	G	S	8	NN	
WC-SB1855 - Pellets & Soil	2/25/23	1705	G	S	8	NN	
WC-SB1252 - Pellets & Soil	2/25/23	1710	G	S	8	NN	
WC-SB1841 - Pellets & Soil	2/25/23	1720	G	S	8	NN	
WC-TW-7 (2-4)	2/25/23	1020	G	S	8	NN	
WC-TW-6 (2-4)	2/25/23	1015	G	S	8	NN	
WC-TW-5 (2-4)	2/25/23	1010	G	S	8	NN	
WC-TW-1 (4-6)	2/25/23	0930	G	S	8	NN	
WC-TW-9 (8-10)	2/25/23	1035	G	S	8	NN	
WC-TW-3 (2-4)	2/25/23	0955	G	S	8	NN	
WC-TW-8 (6-8)	2/25/23	1025	G	S	8	NN	



Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Unknown Poison B

Special Instructions/QC Requirements & Comments:
 See email from Justin Gaudi

Custody Seal No.: _____
 Relinquished by: _____
 Relinquished by: _____
 Relinquished by: _____

Received by: Jason Umbrey
 Date/Time: 2/25/23 1627
 Company: Arcadis

Received by: Jason Umbrey
 Date/Time: 2/25/23 1733
 Company: Arcadis

Received by: Jason Umbrey
 Date/Time: 2/25/23 2030
 Company: Arcadis

Therm ID No.: _____
 Date/Time: 2/25/23 630
 Company: COTO



Chain of Custody Record

644927



Environment Testing
America

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact
 Company Name: Arcadis
 Address: 4065 Cornell Rd, Ste 200
 City/State/Zip: Cincinnati, OH 45241
 Phone: _____
 Fax: _____
 Project Name: NS ER
 Site: East Fairstone, OH
 P O #: 24030745

Project Manager: Justin Gaudin
 Tell/Email: Jason.Arcadis@arcadis.com
 Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below: RUSH
 2 weeks ASAP
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)		Perform MS/MSD (Y/N)		Sample Specific Notes
						Total VOCs	Total SVOCs	TCP Metals	PEAS/PFOA	
WC-TW-2(2-4)	2/25/23	0945	G	S	8	N	N	X	X	
WC-TW-4(2-4)	2/25/23	1005	G	S	8	N	N	X	X	
WC-TW-10(6-8)	2/25/23	1110	G	S	8	N	N	X	X	
WC-TW-COMP (TW-1 thro TW-5)	2/25/23		C	S				X	X	
WC-TW-COMP (TW-6 thro TW-10)	2/25/23		C	S				X	X	
WC Pellets & Soil - COMP	2/25/23		C	S				X	X	all pellets & soils grab

Site Contact: Carlynn Brown Date: 2/25/23 COC No: 2 of 2 COCs
 Lab Contact: Michael Dalton Carrier: Lab/Other
 Sampler: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Return to Client Disposal by Lab Archive for _____ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification: _____ Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
See email from Justin Gaudin

Custody Seals Intact: Yes No

Relinquished by: Justin Gaudin Date/Time: 2/25/23 6:30
 Relinquished by: Jason Arcadis Date/Time: 2/25/23 6:30
 Relinquished by: Justin Gaudin Date/Time: 2/25/23 6:30

Company: Arcadis Received by: Justin Gaudin Date/Time: 2/25/23 6:30
 Company: Arcadis Received by: Justin Gaudin Date/Time: 2/25/23 6:30
 Company: Arcadis Received by: Justin Gaudin Date/Time: 2/25/23 6:30



Barberton Facility

Client Arundis

Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 2-25-23

Opened on 2-26-23

JME

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time

Storage Location

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. 1.7 °C Corrected Cooler Temp. 1.4 °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? Yes No NA larger than this.
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

One 8oz bottle for sample WC-SB2636 - Pellets and Soil was broken during Unpacking. (JME) 2-26-23

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-180954-2

Login Number: 180954

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/28/23 10:55 AM

Creator: Ballard, Megan

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180954-2

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-180954-17	WC-TW-COMP (TW-6 THRU TV	49	50	54	49	50	52	53	51
LCS 410-350542/2-A	Lab Control Sample	91	92	75	72	77	87	87	89
MB 410-350542/1-A	Method Blank	89	88	72	68	76	81	82	83

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-180954-17	WC-TW-COMP (TW-6 THRU TV	48	48	54	50	53	53	51	51
LCS 410-350542/2-A	Lab Control Sample	76	70	87	84	92	83	84	91
MB 410-350542/1-A	Method Blank	72	69	84	80	86	79	78	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-180954-17	WC-TW-COMP (TW-6 THRU TV	53
LCS 410-350542/2-A	Lab Control Sample	90
MB 410-350542/1-A	Method Blank	86

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/11/2023 1:53:26 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181523-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/11/2023 1:53:26 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	10
Surrogate Summary	26
QC Sample Results	28
QC Association Summary	39
Lab Chronicle	42
Certification Summary	44
Chain of Custody	45

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Job ID: 240-181523-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181523-1

Receipt

The samples were received on 3/8/2023 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564793 recovered above the upper control limit for Dichloro-difluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-251362 (240-181523-1), WC-537A (240-181523-2), WC-AL5679 (240-181523-3), WC-AL4944 (240-181523-4), WC-AL4216 (240-181523-5), WC-531A (240-181523-6), TRIP BLANK (240-181523-8), (CCV 240-564793/4), (CCVIS 240-564793/3), (LCS 240-564793/5), (LCS 240-564793/6), (MB 240-564793/8), (240-181229-B-11), (240-181229-B-11 MS) and (240-181229-B-11 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564959 recovered above the upper control limit for Dichloro-difluoromethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-251362 (240-181523-1), WC-537A (240-181523-2), WC-AL5679 (240-181523-3), WC-AL4944 (240-181523-4), WC-AL4216 (240-181523-5), WC-531A (240-181523-6), (CCV 240-564959/4), (CCVIS 240-564959/3), (LCS 240-564959/5), (LCS 240-564959/6), (MB 240-564959/8), (240-181229-D-9), (240-181229-D-9 MS) and (240-181229-D-9 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
Composite	Sample Compositing	None	EET CAN

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181523-1	WC-251362	Water	03/07/23 15:30	03/08/23 12:25
240-181523-2	WC-537A	Water	03/07/23 15:40	03/08/23 12:25
240-181523-3	WC-AL5679	Water	03/07/23 15:58	03/08/23 12:25
240-181523-4	WC-AL4944	Water	03/07/23 15:50	03/08/23 12:25
240-181523-5	WC-AL4216	Water	03/07/23 16:05	03/08/23 12:25
240-181523-6	WC-531A	Water	03/07/23 16:15	03/08/23 12:25
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	Solid	03/07/23 17:15	03/08/23 12:25
240-181523-8	TRIP BLANK	Water	03/07/23 00:00	03/08/23 12:25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0015	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.0086	J	0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00080	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Toluene	0.00074	J	0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.016		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0024		0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0027	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.036		0.010	0.0054	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0014	J	0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0075		0.0010	0.00045	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0035	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.012		0.010	0.0054	mg/L	1		8260D	Total/NA
Vinyl chloride	0.015		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0015	J	0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0018	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.010		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00043	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0037		0.0010	0.00045	mg/L	1		8260D	Total/NA

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.014		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.0021		0.0010	0.00042	mg/L	1		8260D	Total/NA
Tetrachloroethene	0.0029		0.0010	0.00044	mg/L	1		8260D	Total/NA
Toluene	0.00067	J	0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0014		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0026		0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L	1		8260D	TCLP
Arsenic	0.0054	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.099	J	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00027	J	0.050	0.00020	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418 (Continued)

Lab Sample ID: 240-181523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0071	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00082	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 16:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 16:53	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 16:53	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 16:53	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 16:53	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
2-Butanone (MEK)	0.0015	J	0.010	0.0012	mg/L			03/09/23 16:53	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 16:53	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 16:53	1
Acetone	0.0086	J	0.010	0.0054	mg/L			03/09/23 16:53	1
Benzene	0.00080	J	0.0010	0.00042	mg/L			03/09/23 16:53	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 16:53	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 16:53	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 16:53	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 16:53	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 16:53	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 16:53	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 16:53	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 16:53	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 16:53	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 16:53	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 16:53	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 16:53	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 16:53	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 16:53	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 16:53	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 16:53	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 16:53	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 16:53	1
Toluene	0.00074	J	0.0010	0.00044	mg/L			03/09/23 16:53	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 16:53	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 16:53	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 16:53	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
Vinyl chloride	0.016		0.0010	0.00045	mg/L			03/09/23 16:53	1
Xylenes, Total	0.0024		0.0020	0.00042	mg/L			03/09/23 16:53	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	102		78 - 122		03/09/23 16:53	1
Toluene-d8 (Surr)	93		78 - 122		03/10/23 14:14	2
Dibromofluoromethane (Surr)	114		73 - 120		03/09/23 16:53	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 14:14	2
4-Bromofluorobenzene (Surr)	113		56 - 136		03/09/23 16:53	1
4-Bromofluorobenzene (Surr)	99		56 - 136		03/10/23 14:14	2
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/09/23 16:53	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 14:14	2

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 17:17	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 17:17	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 17:17	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 17:17	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
2-Butanone (MEK)	0.0027	J	0.010	0.0012	mg/L			03/09/23 17:17	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 17:17	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 17:17	1
Acetone	0.036		0.010	0.0054	mg/L			03/09/23 17:17	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 17:17	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 17:17	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 17:17	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 17:17	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 17:17	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 17:17	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 17:17	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 17:17	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 17:17	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 17:17	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 17:17	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 17:17	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 17:17	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 17:17	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 17:17	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 17:17	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 17:17	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Xylenes, Total	0.0014	J	0.0020	0.00042	mg/L			03/09/23 17:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	101		78 - 122		03/09/23 17:17	1
Toluene-d8 (Surr)	92		78 - 122		03/10/23 14:38	10
Dibromofluoromethane (Surr)	112		73 - 120		03/09/23 17:17	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 14:38	10
4-Bromofluorobenzene (Surr)	106		56 - 136		03/09/23 17:17	1
4-Bromofluorobenzene (Surr)	92		56 - 136		03/10/23 14:38	10
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		03/09/23 17:17	1
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		03/10/23 14:38	10

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 17:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 17:41	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 17:41	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 17:41	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 17:41	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 17:41	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 17:41	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 17:41	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 17:41	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 17:41	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 17:41	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 17:41	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 17:41	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 17:41	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 17:41	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 17:41	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 17:41	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 17:41	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 17:41	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 17:41	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 17:41	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 17:41	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 17:41	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 17:41	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 17:41	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 17:41	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
Vinyl chloride	0.0075		0.0010	0.00045	mg/L			03/09/23 17:41	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 17:41	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		78 - 122		03/09/23 17:41	1
<i>Toluene-d8 (Surr)</i>	91		78 - 122		03/10/23 15:03	4
<i>Toluene-d8 (Surr)</i>	100		78 - 122		03/10/23 20:12	1
<i>Dibromofluoromethane (Surr)</i>	111		73 - 120		03/09/23 17:41	1
<i>Dibromofluoromethane (Surr)</i>	101		73 - 120		03/10/23 15:03	4
<i>Dibromofluoromethane (Surr)</i>	112		73 - 120		03/10/23 20:12	1
<i>4-Bromofluorobenzene (Surr)</i>	100		56 - 136		03/09/23 17:41	1
<i>4-Bromofluorobenzene (Surr)</i>	90		56 - 136		03/10/23 15:03	4
<i>4-Bromofluorobenzene (Surr)</i>	99		56 - 136		03/10/23 20:12	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		62 - 137		03/09/23 17:41	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		62 - 137		03/10/23 15:03	4
<i>1,2-Dichloroethane-d4 (Surr)</i>	104		62 - 137		03/10/23 20:12	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:05	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:05	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:05	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:05	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
2-Butanone (MEK)	0.0035	J	0.010	0.0012	mg/L			03/09/23 18:05	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:05	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:05	1
Acetone	0.012		0.010	0.0054	mg/L			03/09/23 18:05	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:05	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:05	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:05	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:05	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:05	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:05	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:05	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:05	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:05	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:05	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:05	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:05	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:05	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:05	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:05	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:05	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:05	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
Vinyl chloride	0.015		0.0010	0.00045	mg/L			03/09/23 18:05	1
Xylenes, Total	0.0015	J	0.0020	0.00042	mg/L			03/09/23 18:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	101		78 - 122		03/09/23 18:05	1
Toluene-d8 (Surr)	92		78 - 122		03/10/23 15:27	50
Dibromofluoromethane (Surr)	111		73 - 120		03/09/23 18:05	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 15:27	50
4-Bromofluorobenzene (Surr)	106		56 - 136		03/09/23 18:05	1
4-Bromofluorobenzene (Surr)	89		56 - 136		03/10/23 15:27	50
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		03/09/23 18:05	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 15:27	50

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:28	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:28	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:28	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:28	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
2-Butanone (MEK)	0.0018	J	0.010	0.0012	mg/L			03/09/23 18:28	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:28	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:28	1
Acetone	0.010		0.010	0.0054	mg/L			03/09/23 18:28	1
Benzene	0.00043	J	0.0010	0.00042	mg/L			03/09/23 18:28	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:28	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:28	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:28	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:28	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:28	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:28	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:28	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:28	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:28	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:28	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:28	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:28	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:28	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:28	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:28	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:28	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:28	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:28	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:28	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
Vinyl chloride	0.0037		0.0010	0.00045	mg/L			03/09/23 18:28	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 18:28	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	98		78 - 122		03/09/23 18:28	1
Toluene-d8 (Surr)	90		78 - 122		03/10/23 15:51	20
Dibromofluoromethane (Surr)	110		73 - 120		03/09/23 18:28	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 15:51	20
4-Bromofluorobenzene (Surr)	102		56 - 136		03/09/23 18:28	1
4-Bromofluorobenzene (Surr)	86		56 - 136		03/10/23 15:51	20
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		03/09/23 18:28	1
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		03/10/23 15:51	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:52	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:52	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:52	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:52	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L			03/09/23 18:52	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:52	1
Acetone	0.014		0.010	0.0054	mg/L			03/09/23 18:52	1
Benzene	0.0021		0.0010	0.00042	mg/L			03/09/23 18:52	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:52	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:52	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:52	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:52	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:52	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:52	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:52	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:52	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:52	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:52	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:52	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:52	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:52	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:52	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:52	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:52	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:52	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
Tetrachloroethene	0.0029		0.0010	0.00044	mg/L			03/09/23 18:52	1
Toluene	0.00067	J	0.0010	0.00044	mg/L			03/09/23 18:52	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:52	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:52	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:52	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
Vinyl chloride	0.0014		0.0010	0.00045	mg/L			03/09/23 18:52	1
Xylenes, Total	0.0026		0.0020	0.00042	mg/L			03/09/23 18:52	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	98		78 - 122		03/09/23 18:52	1
Toluene-d8 (Surr)	89		78 - 122		03/10/23 16:16	20
Dibromofluoromethane (Surr)	107		73 - 120		03/09/23 18:52	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 16:16	20
4-Bromofluorobenzene (Surr)	110		56 - 136		03/09/23 18:52	1
4-Bromofluorobenzene (Surr)	91		56 - 136		03/10/23 16:16	20
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		03/09/23 18:52	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 16:16	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/09/23 15:31	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/09/23 15:31	1
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L			03/09/23 15:31	1
Benzene	ND		0.025	0.00042	mg/L			03/09/23 15:31	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/09/23 15:31	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/09/23 15:31	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/09/23 15:31	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/09/23 15:31	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/09/23 15:31	1
Chloroform	ND		0.025	0.00047	mg/L			03/09/23 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	108		80 - 120		03/09/23 15:31	1
<i>Dibromofluoromethane (Surr)</i>	106		71 - 121		03/09/23 15:31	1
<i>4-Bromofluorobenzene (Surr)</i>	103		80 - 120		03/09/23 15:31	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		76 - 120		03/09/23 15:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/10/23 07:43	03/11/23 10:48	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/10/23 07:43	03/11/23 10:48	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/10/23 07:43	03/11/23 10:48	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/10/23 07:43	03/11/23 10:48	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/10/23 07:43	03/11/23 10:48	1
Pyridine	ND		0.0040	0.00036	mg/L		03/10/23 07:43	03/11/23 10:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	91		46 - 137	03/10/23 07:43	03/11/23 10:48	1
<i>Phenol-d5 (Surr)</i>	68		26 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>Nitrobenzene-d5 (Surr)</i>	75		24 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2-Fluorophenol (Surr)</i>	71		19 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2-Fluorobiphenyl (Surr)</i>	102		33 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2,4,6-Tribromophenol (Surr)</i>	95		10 - 120	03/10/23 07:43	03/11/23 10:48	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:27	1
Barium	0.099	J	0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:27	1
Cadmium	0.00027	J	0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:27	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:27	1
Lead	0.0071	J	0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:27	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:27	1
Silver	0.00082	J	0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:27	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:17	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 14:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 14:54	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 14:54	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 14:54	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 14:54	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 14:54	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 14:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 14:54	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 14:54	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 14:54	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 14:54	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 14:54	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 14:54	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 14:54	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 14:54	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 14:54	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 14:54	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 14:54	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 14:54	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 14:54	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 14:54	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 14:54	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 14:54	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 14:54	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 14:54	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 14:54	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 14:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	100		78 - 122		03/09/23 14:54	1
Dibromofluoromethane (Surr)	115		73 - 120		03/09/23 14:54	1
4-Bromofluorobenzene (Surr)	93		56 - 136		03/09/23 14:54	1
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		03/09/23 14:54	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-564830/10	Lab Control Sample	98	100	100	95
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
DBFM = Dibromofluoromethane (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DCA = 1,2-Dichloroethane-d4 (Surr)					

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-181523-7	WC-SB1833, SB1450, SB2446,	108	106	103	105
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	95	97	92
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	96	93	91
LB 240-564696/1-A MB	Method Blank	100	101	96	100
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
DBFM = Dibromofluoromethane (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DCA = 1,2-Dichloroethane-d4 (Surr)					

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-181523-1	WC-251362	102	114	113	106
240-181523-1	WC-251362	93	101	99	93
240-181523-2	WC-537A	101	112	106	104
240-181523-2	WC-537A	92	101	92	94
240-181523-3	WC-AL5679	101	111	100	100
240-181523-3	WC-AL5679	91	101	90	93
240-181523-3	WC-AL5679	100	112	99	104
240-181523-4	WC-AL4944	101	111	106	105
240-181523-4	WC-AL4944	92	99	89	93
240-181523-5	WC-AL4216	98	110	102	103
240-181523-5	WC-AL4216	90	101	86	95
240-181523-6	WC-531A	98	107	110	99
240-181523-6	WC-531A	89	99	91	93
240-181523-8	TRIP BLANK	100	115	93	110
LCS 240-564793/5	Lab Control Sample	107	106	103	101
LCS 240-564793/6	Lab Control Sample	100	109	102	105
LCS 240-564959/5	Lab Control Sample	97	94	94	91
LCS 240-564959/6	Lab Control Sample	90	97	91	92
MB 240-564793/8	Method Blank	102	113	94	106

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
MB 240-564959/8	Method Blank	89	99	81	94

Surrogate Legend

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-564907/4-A	Lab Control Sample	91	61	80	66	84	93
MB 240-564907/3-A	Method Blank	97	64	77	69	87	94

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181523-7	WC-SB1833, SB1450, SB2446,	91	68	75	71	102	95
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	64	80	68	89	113

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-564793/8
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 12:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 12:55	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 12:55	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 12:55	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 12:55	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 12:55	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 12:55	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 12:55	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 12:55	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 12:55	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 12:55	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 12:55	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 12:55	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 12:55	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 12:55	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 12:55	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 12:55	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 12:55	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 12:55	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 12:55	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 12:55	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 12:55	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 12:55	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 12:55	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 12:55	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 12:55	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 12:55	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564793/8
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		78 - 122		03/09/23 12:55	1
Dibromofluoromethane (Surr)	113		73 - 120		03/09/23 12:55	1
4-Bromofluorobenzene (Surr)	94		56 - 136		03/09/23 12:55	1
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/09/23 12:55	1

Lab Sample ID: LCS 240-564793/5
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0248		mg/L		99	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0264		mg/L		106	58 - 157
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0262		mg/L		105	51 - 146
1,1,2-Trichloroethane	0.0250	0.0260		mg/L		104	70 - 138
1,1-Dichloroethane	0.0250	0.0232		mg/L		93	72 - 127
1,1-Dichloroethene	0.0250	0.0254		mg/L		102	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0274		mg/L		110	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0244		mg/L		98	53 - 135
Ethylene Dibromide	0.0250	0.0249		mg/L		100	71 - 134
1,2-Dichlorobenzene	0.0250	0.0264		mg/L		105	78 - 120
1,2-Dichloroethane	0.0250	0.0239		mg/L		96	66 - 128
1,2-Dichloropropane	0.0250	0.0244		mg/L		98	75 - 133
1,3-Dichlorobenzene	0.0250	0.0261		mg/L		104	80 - 120
1,4-Dichlorobenzene	0.0250	0.0260		mg/L		104	80 - 120
2-Butanone (MEK)	0.0500	0.0486		mg/L		97	54 - 156
2-Hexanone	0.0500	0.0538		mg/L		108	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0546		mg/L		109	46 - 158
Acetone	0.0500	0.0464		mg/L		93	50 - 149
Benzene	0.0250	0.0252		mg/L		101	77 - 123
Dichlorobromomethane	0.0250	0.0239		mg/L		96	69 - 126
Bromoform	0.0250	0.0255		mg/L		102	57 - 129
Bromomethane	0.0125	0.0115		mg/L		92	36 - 142
Carbon disulfide	0.0250	0.0247		mg/L		99	43 - 140
Carbon tetrachloride	0.0250	0.0249		mg/L		100	55 - 137
Chlorobenzene	0.0250	0.0256		mg/L		103	80 - 121
Chloroethane	0.0125	0.0109		mg/L		87	38 - 152
Chloroform	0.0250	0.0241		mg/L		96	74 - 122
Chloromethane	0.0125	0.0124		mg/L		99	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0243		mg/L		97	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0246		mg/L		98	64 - 130
Cyclohexane	0.0250	0.0272		mg/L		109	58 - 146
Chlorodibromomethane	0.0250	0.0245		mg/L		98	70 - 124
Dichlorodifluoromethane	0.0125	0.0117		mg/L		94	34 - 153
Ethylbenzene	0.0250	0.0258		mg/L		103	80 - 121
Isopropylbenzene	0.0250	0.0271		mg/L		109	74 - 128
Methyl acetate	0.0500	0.0426		mg/L		85	42 - 169
Methyl tert-butyl ether	0.0250	0.0244		mg/L		98	65 - 126
Methylcyclohexane	0.0250	0.0283		mg/L		113	62 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564793/5
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0259		mg/L		104	71 - 125
Styrene	0.0250	0.0272		mg/L		109	80 - 135
Tetrachloroethene	0.0250	0.0266		mg/L		106	76 - 123
Toluene	0.0250	0.0259		mg/L		104	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0245		mg/L		98	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0248		mg/L		99	57 - 129
Trichloroethene	0.0250	0.0248		mg/L		99	70 - 122
Trichlorofluoromethane	0.0125	0.0113		mg/L		90	30 - 170
Vinyl chloride	0.0125	0.0116		mg/L		93	60 - 144
Xylenes, Total	0.0500	0.0526		mg/L		105	80 - 121
m-Xylene & p-Xylene	0.0250	0.0264		mg/L		106	80 - 120
o-Xylene	0.0250	0.0262		mg/L		105	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: LCS 240-564793/6
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120
4-Bromofluorobenzene (Surr)	102		56 - 136
1,2-Dichloroethane-d4 (Surr)	105		62 - 137

Lab Sample ID: LCS 240-564830/10
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.05		mg/L		105	74 - 127
1,2-Dichloroethane	1.00	0.934		mg/L		93	72 - 120
2-Butanone (MEK)	2.00	2.18		mg/L		109	68 - 130
Benzene	1.00	1.04		mg/L		104	80 - 121
Carbon tetrachloride	1.00	0.914		mg/L		91	69 - 120
Chlorobenzene	1.00	0.992		mg/L		99	80 - 120
Chloroform	1.00	1.01		mg/L		101	75 - 120
Tetrachloroethene	1.00	1.03		mg/L		103	74 - 120
Trichloroethene	1.00	0.954		mg/L		95	75 - 120
Vinyl chloride	1.00	0.684		mg/L		68	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		71 - 121

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564830/10
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		76 - 120

Lab Sample ID: MB 240-564959/8
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Method Blank
Prep Type: Total/NA

<i>Analyte</i>	<i>MB</i>	<i>MB</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>Result</i>	<i>Qualifier</i>							
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/10/23 13:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/10/23 13:50	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/10/23 13:50	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/10/23 13:50	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/10/23 13:50	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/10/23 13:50	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/10/23 13:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/10/23 13:50	1
Acetone	ND		0.010	0.0054	mg/L			03/10/23 13:50	1
Benzene	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/10/23 13:50	1
Bromoform	ND		0.0010	0.00076	mg/L			03/10/23 13:50	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/10/23 13:50	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/10/23 13:50	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/10/23 13:50	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/10/23 13:50	1
Chloroform	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/10/23 13:50	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/10/23 13:50	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/10/23 13:50	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/10/23 13:50	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/10/23 13:50	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/10/23 13:50	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/10/23 13:50	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/10/23 13:50	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/10/23 13:50	1
Styrene	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564959/8
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
Toluene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/10/23 13:50	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/10/23 13:50	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/10/23 13:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		78 - 122		03/10/23 13:50	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 13:50	1
4-Bromofluorobenzene (Surr)	81		56 - 136		03/10/23 13:50	1
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		03/10/23 13:50	1

Lab Sample ID: LCS 240-564959/5
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0242		mg/L		97	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0264		mg/L		105	58 - 157
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0264		mg/L		106	51 - 146
1,1,2-Trichloroethane	0.0250	0.0256		mg/L		102	70 - 138
1,1-Dichloroethane	0.0250	0.0229		mg/L		91	72 - 127
1,1-Dichloroethene	0.0250	0.0251		mg/L		101	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0268		mg/L		107	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0232		mg/L		93	53 - 135
Ethylene Dibromide	0.0250	0.0246		mg/L		99	71 - 134
1,2-Dichlorobenzene	0.0250	0.0260		mg/L		104	78 - 120
1,2-Dichloroethane	0.0250	0.0232		mg/L		93	66 - 128
1,2-Dichloropropane	0.0250	0.0237		mg/L		95	75 - 133
1,3-Dichlorobenzene	0.0250	0.0260		mg/L		104	80 - 120
1,4-Dichlorobenzene	0.0250	0.0257		mg/L		103	80 - 120
2-Butanone (MEK)	0.0500	0.0473		mg/L		95	54 - 156
2-Hexanone	0.0500	0.0542		mg/L		108	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0542		mg/L		108	46 - 158
Acetone	0.0500	0.0468		mg/L		94	50 - 149
Benzene	0.0250	0.0247		mg/L		99	77 - 123
Dichlorobromomethane	0.0250	0.0235		mg/L		94	69 - 126
Bromoform	0.0250	0.0249		mg/L		100	57 - 129
Bromomethane	0.0125	0.0137		mg/L		110	36 - 142
Carbon disulfide	0.0250	0.0243		mg/L		97	43 - 140
Carbon tetrachloride	0.0250	0.0246		mg/L		98	55 - 137
Chlorobenzene	0.0250	0.0252		mg/L		101	80 - 121
Chloroethane	0.0125	0.0106		mg/L		85	38 - 152
Chloroform	0.0250	0.0234		mg/L		94	74 - 122
Chloromethane	0.0125	0.0121		mg/L		97	47 - 143

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564959/5
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.0250	0.0238		mg/L		95	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0240		mg/L		96	64 - 130
Cyclohexane	0.0250	0.0276		mg/L		111	58 - 146
Chlorodibromomethane	0.0250	0.0241		mg/L		96	70 - 124
Dichlorodifluoromethane	0.0125	0.0116		mg/L		93	34 - 153
Ethylbenzene	0.0250	0.0259		mg/L		104	80 - 121
Isopropylbenzene	0.0250	0.0270		mg/L		108	74 - 128
Methyl acetate	0.0500	0.0418		mg/L		84	42 - 169
Methyl tert-butyl ether	0.0250	0.0238		mg/L		95	65 - 126
Methylcyclohexane	0.0250	0.0289		mg/L		116	62 - 136
Methylene Chloride	0.0250	0.0250		mg/L		100	71 - 125
Styrene	0.0250	0.0269		mg/L		108	80 - 135
Tetrachloroethene	0.0250	0.0265		mg/L		106	76 - 123
Toluene	0.0250	0.0256		mg/L		102	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0241		mg/L		97	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0248		mg/L		99	57 - 129
Trichloroethene	0.0250	0.0241		mg/L		97	70 - 122
Trichlorofluoromethane	0.0125	0.0112		mg/L		90	30 - 170
Vinyl chloride	0.0125	0.0116		mg/L		93	60 - 144
Xylenes, Total	0.0500	0.0517		mg/L		103	80 - 121
m-Xylene & p-Xylene	0.0250	0.0260		mg/L		104	80 - 120
o-Xylene	0.0250	0.0257		mg/L		103	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120
4-Bromofluorobenzene (Surr)	94		56 - 136
1,2-Dichloroethane-d4 (Surr)	91		62 - 137

Lab Sample ID: LCS 240-564959/6
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	90		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120
4-Bromofluorobenzene (Surr)	91		56 - 136
1,2-Dichloroethane-d4 (Surr)	92		62 - 137

Lab Sample ID: LB 240-564696/1-A MB
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/09/23 14:21	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/09/23 14:21	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/09/23 14:21	1
Benzene	ND		0.025	0.00042	mg/L			03/09/23 14:21	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-564696/1-A MB
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/09/23 14:21	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/09/23 14:21	1
Chloroform	ND		0.025	0.00047	mg/L			03/09/23 14:21	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/09/23 14:21	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/09/23 14:21	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/09/23 14:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		80 - 120		03/09/23 14:21	1
Dibromofluoromethane (Surr)	101		71 - 121		03/09/23 14:21	1
4-Bromofluorobenzene (Surr)	96		80 - 120		03/09/23 14:21	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		03/09/23 14:21	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	ND		1.00	1.06		mg/L		106	72 - 127
1,2-Dichloroethane	ND		1.00	0.937		mg/L		94	70 - 120
2-Butanone (MEK)	0.012	J	2.00	2.31		mg/L		115	76 - 127
Benzene	ND		1.00	1.03		mg/L		103	80 - 124
Carbon tetrachloride	ND		1.00	0.890		mg/L		89	63 - 120
Chlorobenzene	ND		1.00	0.991		mg/L		99	80 - 120
Chloroform	ND		1.00	0.981		mg/L		98	75 - 121
Tetrachloroethene	ND		1.00	1.03		mg/L		103	68 - 120
Trichloroethene	ND		1.00	0.975		mg/L		97	70 - 120
Vinyl chloride	ND		1.00	0.657		mg/L		66	55 - 144

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	95		71 - 121
4-Bromofluorobenzene (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	92		76 - 120

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier						
1,1-Dichloroethene	ND		1.00	1.03		mg/L		103	72 - 127	2	11
1,2-Dichloroethane	ND		1.00	0.924		mg/L		92	70 - 120	1	10
2-Butanone (MEK)	0.012	J	2.00	2.23		mg/L		111	76 - 127	3	17
Benzene	ND		1.00	1.04		mg/L		104	80 - 124	0	10
Carbon tetrachloride	ND		1.00	0.901		mg/L		90	63 - 120	1	11
Chlorobenzene	ND		1.00	0.977		mg/L		98	80 - 120	1	10
Chloroform	ND		1.00	0.978		mg/L		98	75 - 121	0	10
Tetrachloroethene	ND		1.00	1.01		mg/L		101	68 - 120	2	10

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene	ND		1.00	0.938		mg/L		94	70 - 120	4	10
Vinyl chloride	ND		1.00	0.704		mg/L		70	55 - 144	7	11
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
Toluene-d8 (Surr)	95		80 - 120								
Dibromofluoromethane (Surr)	96		71 - 121								
4-Bromofluorobenzene (Surr)	93		80 - 120								
1,2-Dichloroethane-d4 (Surr)	91		76 - 120								

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-564907/3-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/10/23 07:43	03/11/23 09:13	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/10/23 07:43	03/11/23 09:13	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/10/23 07:43	03/11/23 09:13	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/10/23 07:43	03/11/23 09:13	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/10/23 07:43	03/11/23 09:13	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/10/23 07:43	03/11/23 09:13	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/10/23 07:43	03/11/23 09:13	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/10/23 07:43	03/11/23 09:13	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/10/23 07:43	03/11/23 09:13	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/10/23 07:43	03/11/23 09:13	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/10/23 07:43	03/11/23 09:13	1
Pyridine	ND		0.0040	0.00036	mg/L		03/10/23 07:43	03/11/23 09:13	1
Surrogate	%Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	97		46 - 137				03/10/23 07:43	03/11/23 09:13	1
Phenol-d5 (Surr)	64		26 - 120				03/10/23 07:43	03/11/23 09:13	1
Nitrobenzene-d5 (Surr)	77		24 - 120				03/10/23 07:43	03/11/23 09:13	1
2-Fluorophenol (Surr)	69		19 - 120				03/10/23 07:43	03/11/23 09:13	1
2-Fluorobiphenyl (Surr)	87		33 - 120				03/10/23 07:43	03/11/23 09:13	1
2,4,6-Tribromophenol (Surr)	94		10 - 120				03/10/23 07:43	03/11/23 09:13	1

Lab Sample ID: LCS 240-564907/4-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.0800	0.0562		mg/L		70	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0665		mg/L		83	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0681		mg/L		85	51 - 120
2,4-Dinitrotoluene	0.0800	0.0743		mg/L		93	58 - 125
Hexachlorobenzene	0.0800	0.0538		mg/L		67	55 - 120
Hexachlorobutadiene	0.0800	0.0571		mg/L		71	41 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-564907/4-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachloroethane	0.0800	0.0579		mg/L		72	39 - 120
2-Methylphenol	0.0800	0.0564		mg/L		71	45 - 120
3 & 4 Methylphenol	0.0800	0.0536		mg/L		67	40 - 120
Nitrobenzene	0.0800	0.0609		mg/L		76	47 - 120
Pentachlorophenol	0.160	0.134		mg/L		84	19 - 132
Pyridine	0.160	0.0857		mg/L		54	10 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	91		46 - 137
Phenol-d5 (Surr)	61		26 - 120
Nitrobenzene-d5 (Surr)	80		24 - 120
2-Fluorophenol (Surr)	66		19 - 120
2-Fluorobiphenyl (Surr)	84		33 - 120
2,4,6-Tribromophenol (Surr)	93		10 - 120

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564907

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	ND		0.0800	0.0629		mg/L		79	37 - 120
2,4,5-Trichlorophenol	ND		0.0800	0.0718		mg/L		90	25 - 128
2,4,6-Trichlorophenol	ND		0.0800	0.0642		mg/L		80	23 - 122
2,4-Dinitrotoluene	ND		0.0800	0.0861		mg/L		108	27 - 127
Hexachlorobenzene	ND		0.0800	0.0574		mg/L		72	18 - 123
Hexachlorobutadiene	ND		0.0800	0.0576		mg/L		72	10 - 120
Hexachloroethane	ND		0.0800	0.0596		mg/L		75	10 - 120
2-Methylphenol	ND		0.0800	0.0591		mg/L		74	22 - 120
3 & 4 Methylphenol	ND		0.0800	0.0601		mg/L		75	16 - 123
Nitrobenzene	ND		0.0800	0.0610		mg/L		76	26 - 120
Pentachlorophenol	ND		0.160	0.137		mg/L		86	10 - 132
Pyridine	ND		0.160	0.0906		mg/L		57	10 - 120

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	95		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	80		24 - 120
2-Fluorophenol (Surr)	68		19 - 120
2-Fluorobiphenyl (Surr)	89		33 - 120
2,4,6-Tribromophenol (Surr)	113		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-564744/2-A
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564744

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:19	1
Barium	ND		0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:19	1
Cadmium	ND		0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:19	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:19	1
Lead	ND		0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:19	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:19	1
Silver	ND		0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:19	1

Lab Sample ID: LCS 240-564744/3-A
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	2.00	1.91		mg/L		95	50 - 150
Cadmium	1.00	1.02		mg/L		102	50 - 150
Chromium	1.00	1.00		mg/L		100	50 - 150
Lead	1.00	0.919		mg/L		92	50 - 150
Selenium	2.00	2.14		mg/L		107	50 - 150
Silver	0.100	0.108		mg/L		108	50 - 150

Lab Sample ID: LB 240-564694/1-B
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564744

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:14	1
Barium	ND		0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:14	1
Cadmium	ND		0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:14	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:14	1
Lead	ND		0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:14	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:14	1
Silver	ND		0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:14	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564744

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Arsenic	0.0054	J	5.00	5.06		mg/L		101	75 - 125
Barium	0.099	J	50.0	47.7		mg/L		95	75 - 125
Cadmium	0.00027	J	1.00	0.982		mg/L		98	75 - 125
Chromium	ND		5.00	4.90		mg/L		98	75 - 125
Lead	0.0071	J	5.00	4.71		mg/L		94	75 - 125
Selenium	ND		1.00	1.02		mg/L		102	75 - 125
Silver	0.00082	J	1.00	0.991		mg/L		99	75 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564744

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Arsenic	0.0054	J	5.00	5.15		mg/L		103	75 - 125	2	20
Barium	0.099	J	50.0	48.3		mg/L		96	75 - 125	1	20
Cadmium	0.00027	J	1.00	0.999		mg/L		100	75 - 125	2	20
Chromium	ND		5.00	5.00		mg/L		100	75 - 125	2	20
Lead	0.0071	J	5.00	4.78		mg/L		95	75 - 125	1	20
Selenium	ND		1.00	1.03		mg/L		103	75 - 125	1	20
Silver	0.00082	J	1.00	1.01		mg/L		101	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-564745/2-A
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564745

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:13	1

Lab Sample ID: LCS 240-564745/3-A
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564745

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier				Limits	
Mercury	0.00500	0.00533		mg/L		107	80 - 120	

Lab Sample ID: LB 240-564694/1-C
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564745

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:11	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564745

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier				Limits	
Mercury	ND		0.00500	0.00458		mg/L		92	80 - 120	

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564745

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Mercury	ND		0.00500	0.00510		mg/L		102	80 - 120	11	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

GC/MS VOA

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Leach Batch: 564696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
LB 240-564696/1-A MB	Method Blank	TCLP	Solid	1311	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Analysis Batch: 564793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-1	WC-251362	Total/NA	Water	8260D	
240-181523-2	WC-537A	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-4	WC-AL4944	Total/NA	Water	8260D	
240-181523-5	WC-AL4216	Total/NA	Water	8260D	
240-181523-6	WC-531A	Total/NA	Water	8260D	
240-181523-8	TRIP BLANK	Total/NA	Water	8260D	
MB 240-564793/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564793/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564793/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 564830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696
LB 240-564696/1-A MB	Method Blank	TCLP	Solid	8260D	564696
LCS 240-564830/10	Lab Control Sample	Total/NA	Solid	8260D	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696

Analysis Batch: 564959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-1	WC-251362	Total/NA	Water	8260D	
240-181523-2	WC-537A	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-4	WC-AL4944	Total/NA	Water	8260D	
240-181523-5	WC-AL4216	Total/NA	Water	8260D	
240-181523-6	WC-531A	Total/NA	Water	8260D	
MB 240-564959/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564959/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564959/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

GC/MS Semi VOA

Leach Batch: 564694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Prep Batch: 564907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3510C	564694
MB 240-564907/3-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-564907/4-A	Lab Control Sample	Total/NA	Solid	3510C	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3510C	564694

Analysis Batch: 565032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8270E	564907
MB 240-564907/3-A	Method Blank	Total/NA	Solid	8270E	564907
LCS 240-564907/4-A	Lab Control Sample	Total/NA	Solid	8270E	564907
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8270E	564907

Metals

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Leach Batch: 564694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
LB 240-564694/1-B	Method Blank	TCLP	Solid	1311	
LB 240-564694/1-C	Method Blank	TCLP	Solid	1311	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Prep Batch: 564744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694
LB 240-564694/1-B	Method Blank	TCLP	Solid	3010A	564694
MB 240-564744/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-564744/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694

Prep Batch: 564745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694
LB 240-564694/1-C	Method Blank	TCLP	Solid	7470A	564694
MB 240-564745/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-564745/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Metals

Analysis Batch: 564983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744
LB 240-564694/1-B	Method Blank	TCLP	Solid	6010D	564744
MB 240-564744/2-A	Method Blank	Total/NA	Solid	6010D	564744
LCS 240-564744/3-A	Lab Control Sample	Total/NA	Solid	6010D	564744
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744

Analysis Batch: 565010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745
LB 240-564694/1-C	Method Blank	TCLP	Solid	7470A	564745
MB 240-564745/2-A	Method Blank	Total/NA	Solid	7470A	564745
LCS 240-564745/3-A	Lab Control Sample	Total/NA	Solid	7470A	564745
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 16:53
Total/NA	Analysis	8260D		2	564959	SAM	EET CAN	03/10/23 14:14

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 17:17
Total/NA	Analysis	8260D		10	564959	SAM	EET CAN	03/10/23 14:38

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 17:41
Total/NA	Analysis	8260D		4	564959	SAM	EET CAN	03/10/23 15:03
Total/NA	Analysis	8260D		1	564959	SAM	EET CAN	03/10/23 20:12

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:05
Total/NA	Analysis	8260D		50	564959	SAM	EET CAN	03/10/23 15:27

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:28
Total/NA	Analysis	8260D		20	564959	SAM	EET CAN	03/10/23 15:51

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:52
Total/NA	Analysis	8260D		20	564959	SAM	EET CAN	03/10/23 16:16

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564696	DRJ	EET CAN	03/08/23 15:45 - 03/09/23 09:00 ¹
TCLP	Analysis	8260D		1	564830	AJS	EET CAN	03/09/23 15:31
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	3510C			564907	MDH	EET CAN	03/10/23 07:43
TCLP	Analysis	8270E		1	565032	MRU	EET CAN	03/11/23 10:48
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	3010A			564744	MRL	EET CAN	03/09/23 14:00
TCLP	Analysis	6010D		1	564983	RKT	EET CAN	03/10/23 11:27
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	7470A			564745	MRL	EET CAN	03/09/23 14:00
TCLP	Analysis	7470A		1	565010	DSH	EET CAN	03/10/23 14:17

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 14:54

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

TAL-8210 Regulatory Program: DW NPDES RCRA Other: _____

Client Contact
 Company Name: **ARCADIS**
 Address: **111 SAUNDERS LN**
 City/State/Zip: **BIRFIELD VA 24005**
 Phone: _____
 Fax: _____
 Project Name: _____
 Site: _____
 P O # _____

Project Manager: **JOHN AFRIP**
 Tel/Email: **JOHN.AFRIP@ARCADIS.COM**
 Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below **PUSH**
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Lab Contact:	Site Contact:	Date:	Carrier:	COC No:	Sampler:	For Lab Use Only:
WC-251362	3/17/23	1530	G	WW	3			TCLP Metal	Michelle UYTENDIJK	3/17/23				Walk-in Client:
WC-537A	3/17/23	1540	G	WW	3			TCLP VOC						Lab Sampling:
WC-AL5679	3/17/23	1550	G	WW	3			TCLP SVOC						Job / SDG No.:
WC-AL4944	3/17/23	1550	G	WW	3									
WC-AL4216	3/17/23	1605	G	WW	3									
WC-531A	3/17/23	1615	G	WW	3									
WC-SB1833	3/17/23	1654	G	S	1									
WC-SB1450	3/17/23	1650	G	S	1									
WC-SB2446	3/17/23	1750	G	S	1									
WC-SB1905	3/17/23	1710	G	S	1									
WC-SB2418	3/17/23	1715	G	S	1									
WC	3/17/23													



Preservation Used: (1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other) **HCL**
 Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments: _____
 Custody Seal No.: _____
 Relinquished by: **Wanda Ashley Harris**
 Relinquished by: **Wanda Ashley Harris**
 Relinquished by: **Wanda Ashley Harris**
 Relinquished by: _____
 Received by: **Jason Ambush**
 Received by: **Jason Ambush**
 Received in Laboratory by: _____
 Date/Time: **3/17/2023 12:20**
 Date/Time: **3/17/2023 12:20**
 Date/Time: _____
 Date/Time: _____
 Company: **ARCADIS**
 Company: **ARCADIS**
 Company: **ARCADIS**
 Company: _____
 Cooler Temp. (°C): Obs'd: _____
 Cooler Temp. (°C): _____
 Therm ID No.: _____
 Date/Time: **3-17-23 0905**
 Date/Time: **3-17-23 1225**
 Date/Time: _____
 Date/Time: _____
 Company: **Eurofins**
 Company: **Eurofins**
 Company: _____
 Company: _____

Eurofins - Canton Sample Receipt Form/Narrative Login # : 181523
Barberton Facility

Client Arcadis Site Name NSRR-ER Cooler unpacked by: [Signature]
Cooler Received on 3-8-23 Opened on 3-8-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 2.6 °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N) # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? [Signature] 3-8-23 Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0104201G Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____
TB included. Not on COC. Logged last. [Signature] 3-8-23

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/17/2023 4:12:25 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181838-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/17/2023 4:12:25 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	23
Lab Chronicle	25
Certification Summary	26
Chain of Custody	27

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*.	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Job ID: 240-181838-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181838-1

Receipt

The samples were received on 3/13/2023 7:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 5.3°C, 5.3°C and 9.6°C

GC/MS VOA

Method 8260D: The following sample(s) were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-S. TRK-EAST-07 (4-6) (240-181838-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The laboratory control sample (LCS) for preparation batch 240-565464 and analytical batch 240-565783 recovered outside control limits for the following analyte: 4,6-Dinitro-2-methylphenol. This has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified for the following sample: WC-S. TRK-EAST-07 (4-6) (240-181838-7).

Method 8270E: The following sample was diluted to bring the concentration of target analytes within the calibration range: WC-S. TRK-EAST-07 (4-6) (240-181838-7). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Solid	03/13/23 13:55	03/13/23 19:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.028		0.024	0.020	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	0.0016	J	0.0096	0.0013	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.0030	J	0.0096	0.0012	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	3.4		1.9	0.25	mg/Kg	100	✳	8270E	Total/NA
Chrysene	1.5	J	1.9	0.19	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	1.8	J	1.9	0.56	mg/Kg	100	✳	8270E	Total/NA
Naphthalene	2.2		1.9	0.30	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	2.8		1.9	0.28	mg/Kg	100	✳	8270E	Total/NA
Pyrene	2.2		1.9	0.27	mg/Kg	100	✳	8270E	Total/NA
2-Butoxyethanol	140		8.8	8.2	mg/Kg	100	✳	8270E	Total/NA
Barium	0.29	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0075	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00079	J B	0.050	0.00062	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Percent Solids: 79.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0048	0.0017	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,1,2,2-Tetrachloroethane	ND		0.0048	0.0014	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0048	0.0012	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,1,2-Trichloroethane	ND		0.0048	0.0011	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,1-Dichloroethane	ND		0.0048	0.00067	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,1-Dichloroethene	ND		0.0048	0.0018	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,2,4-Trichlorobenzene	ND		0.0048	0.0024	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,2-Dibromo-3-Chloropropane	ND		0.0096	0.0035	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Ethylene Dibromide	ND		0.0048	0.00074	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,2-Dichlorobenzene	ND		0.0048	0.0011	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,2-Dichloroethane	ND		0.0048	0.00074	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,2-Dichloropropane	ND		0.0048	0.00082	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,3-Dichlorobenzene	ND		0.0048	0.00079	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
1,4-Dichlorobenzene	ND		0.0048	0.00085	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
2-Butanone (MEK)	ND		0.019	0.0034	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
2-Hexanone	ND		0.019	0.0039	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
4-Methyl-2-pentanone (MIBK)	ND		0.019	0.0036	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Acetone	0.028		0.024	0.020	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Benzene	ND		0.0048	0.00067	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Dichlorobromomethane	ND		0.0048	0.0014	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Bromoform	ND		0.0048	0.0023	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Bromomethane	ND		0.0048	0.0040	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Carbon disulfide	ND		0.0048	0.0011	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Carbon tetrachloride	ND		0.0048	0.0031	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Chlorobenzene	ND		0.0048	0.00088	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Chloroethane	ND		0.0048	0.0026	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Chloroform	ND		0.0048	0.00076	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Chloromethane	ND		0.0048	0.0022	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
cis-1,2-Dichloroethene	ND		0.0048	0.0014	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
cis-1,3-Dichloropropene	ND		0.0048	0.0028	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Cyclohexane	0.0016	J	0.0096	0.0013	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Chlorodibromomethane	ND		0.0048	0.0027	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Dichlorodifluoromethane	ND		0.0048	0.00091	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Ethylbenzene	ND		0.0048	0.0010	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Isopropylbenzene	ND		0.0048	0.0019	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Methyl acetate	ND		0.024	0.0033	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Methyl tert-butyl ether	ND		0.0048	0.0019	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Methylcyclohexane	0.0030	J	0.0096	0.0012	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Methylene Chloride	ND		0.024	0.012	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Styrene	ND		0.0048	0.0011	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Tetrachloroethene	ND		0.0048	0.00070	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Toluene	ND		0.0048	0.00075	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
trans-1,2-Dichloroethene	ND		0.0048	0.0014	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
trans-1,3-Dichloropropene	ND		0.0048	0.0036	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Trichloroethene	ND		0.0048	0.00061	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Trichlorofluoromethane	ND		0.0048	0.0026	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Vinyl chloride	ND		0.0048	0.0017	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Xylenes, Total	ND		0.0096	0.0015	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1
Butyl acrylate	ND		0.048	0.019	mg/Kg	✱	03/13/23 20:47	03/16/23 13:31	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Percent Solids: 79.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0096	0.0030	mg/Kg	☼	03/13/23 20:47	03/16/23 13:31	1
2-Ethylhexyl acrylate	ND		0.048	0.023	mg/Kg	☼	03/13/23 20:47	03/16/23 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		56 - 125				03/13/23 20:47	03/16/23 13:31	1
Dibromofluoromethane (Surr)	77		41 - 138				03/13/23 20:47	03/16/23 13:31	1
4-Bromofluorobenzene (Surr)	73		41 - 143				03/13/23 20:47	03/16/23 13:31	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				03/13/23 20:47	03/16/23 13:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.3	2.1	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4,5-Trichlorophenol	ND		19	8.7	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4,6-Trichlorophenol	ND		19	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4-Dichlorophenol	ND		19	5.5	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4-Dimethylphenol	ND		19	5.0	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4-Dinitrophenol	ND		42	18	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,4-Dinitrotoluene	ND		25	7.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2,6-Dinitrotoluene	ND		25	7.1	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Chloronaphthalene	ND		6.3	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Chlorophenol	ND		6.3	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Methylnaphthalene	3.4		1.9	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Methylphenol	ND		25	3.9	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Nitroaniline	ND		25	5.0	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
2-Nitrophenol	ND		6.3	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
3,3'-Dichlorobenzidine	ND		13	5.4	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
3-Nitroaniline	ND		25	6.2	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4,6-Dinitro-2-methylphenol	ND	*	42	10	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Bromophenyl phenyl ether	ND		6.3	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Chloro-3-methylphenol	ND		19	5.7	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Chloroaniline	ND		19	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Chlorophenyl phenyl ether	ND		6.3	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Nitroaniline	ND		25	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
4-Nitrophenol	ND		42	12	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Acenaphthene	ND		1.9	0.36	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Acenaphthylene	ND		1.9	0.50	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Acetophenone	ND		13	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Anthracene	ND		1.9	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Atrazine	ND		25	4.5	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzaldehyde	ND		13	2.9	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzo[a]anthracene	ND		1.9	0.43	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzo[a]pyrene	ND		1.9	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzo[b]fluoranthene	ND		1.9	0.82	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzo[g,h,i]perylene	ND		1.9	0.89	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Benzo[k]fluoranthene	ND		1.9	0.87	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Bis(2-chloroethoxy)methane	ND		13	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Bis(2-chloroethyl)ether	ND		13	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Bis(2-ethylhexyl) phthalate	ND		8.8	6.4	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100
Butyl benzyl phthalate	ND		8.8	2.8	mg/Kg	☼	03/15/23 09:31	03/17/23 13:30	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Percent Solids: 79.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		42	9.4	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Carbazole	ND		6.3	2.4	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Chrysene	1.5	J	1.9	0.19	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Dibenz(a,h)anthracene	ND		1.9	0.87	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Dibenzofuran	ND		6.3	1.6	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Diethyl phthalate	ND		8.8	3.9	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Dimethyl phthalate	ND		8.8	1.8	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Di-n-butyl phthalate	ND		8.8	6.4	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Di-n-octyl phthalate	ND		8.8	3.5	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Fluoranthene	1.8	J	1.9	0.56	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Fluorene	ND		1.9	0.35	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Hexachlorobenzene	ND		1.9	0.36	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Hexachlorobutadiene	ND		6.3	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Hexachlorocyclopentadiene	ND		42	7.8	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Hexachloroethane	ND		6.3	1.1	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Indeno[1,2,3-cd]pyrene	ND		1.9	0.93	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Isophorone	ND		6.3	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
N-Nitrosodi-n-propylamine	ND		6.3	1.4	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
N-Nitrosodiphenylamine	ND		6.3	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Naphthalene	2.2		1.9	0.30	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Nitrobenzene	ND		13	1.6	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Pentachlorophenol	ND		19	7.3	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Phenanthrene	2.8		1.9	0.28	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Phenol	ND		6.3	1.0	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
Pyrene	2.2		1.9	0.27	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
3 & 4 Methylphenol	ND		50	3.7	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100
2-Butoxyethanol	140		8.8	8.2	mg/Kg	✳	03/15/23 09:31	03/17/23 13:30	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/15/23 09:31	03/17/23 13:30	100
Phenol-d5 (Surr)	62		26 - 120	03/15/23 09:31	03/17/23 13:30	100
Nitrobenzene-d5 (Surr)	50		25 - 120	03/15/23 09:31	03/17/23 13:30	100
2-Fluorophenol (Surr)	54		20 - 120	03/15/23 09:31	03/17/23 13:30	100
2-Fluorobiphenyl (Surr)	75		34 - 120	03/15/23 09:31	03/17/23 13:30	100
2,4,6-Tribromophenol (Surr)	54		10 - 120	03/15/23 09:31	03/17/23 13:30	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/15/23 14:00	03/16/23 15:36	1
Barium	0.29	J B	0.50	0.0013	mg/L		03/15/23 14:00	03/16/23 15:36	1
Cadmium	0.0011	J	0.050	0.00020	mg/L		03/15/23 14:00	03/16/23 15:36	1
Chromium	ND		0.050	0.0040	mg/L		03/15/23 14:00	03/16/23 15:36	1
Lead	0.0075	J	0.050	0.0028	mg/L		03/15/23 14:00	03/16/23 15:36	1
Selenium	ND		0.050	0.0060	mg/L		03/15/23 14:00	03/16/23 15:36	1
Silver	0.00079	J B	0.050	0.00062	mg/L		03/15/23 14:00	03/16/23 15:36	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/15/23 16:00	03/16/23 16:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Percent Solids: 79.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.9		0.1	0.1	%			03/14/23 12:45	1
Percent Moisture (EPA Moisture)	20.1		0.1	0.1	%			03/14/23 12:45	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TOL	DBFM	BFB	DCA
		(56-125)	(41-138)	(41-143)	(58-125)
240-181838-7	WC-S. TRK-EAST-07 (4-6)	91	77	73	84
LCS 240-565563/6	Lab Control Sample	83	81	79	82
MB 240-565546/1-A	Method Blank	80	76	73	83
MB 240-565563/7	Method Blank	81	74	73	83

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL	PHL	NBZ	2FP	FBP	TBP
		(46-137)	(26-120)	(25-120)	(20-120)	(34-120)	(10-120)
240-181838-7	WC-S. TRK-EAST-07 (4-6)	101	62	50	54	75	54
LCS 240-565464/2-A	Lab Control Sample	94	86	69	83	77	74
MB 240-565464/1-A	Method Blank	106	67	76	54	83	34

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-565546/1-A
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565546

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Acetone	ND		0.025	0.021	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/15/23 18:20	03/16/23 12:46	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565546/1-A
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565546

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		0.050	0.019	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
2-Ethylhexyl acrylate	ND		0.050	0.024	mg/Kg		03/15/23 18:20	03/16/23 12:46	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	80		56 - 125				03/15/23 18:20	03/16/23 12:46	1
Dibromofluoromethane (Surr)	76		41 - 138				03/15/23 18:20	03/16/23 12:46	1
4-Bromofluorobenzene (Surr)	73		41 - 143				03/15/23 18:20	03/16/23 12:46	1
1,2-Dichloroethane-d4 (Surr)	83		58 - 125				03/15/23 18:20	03/16/23 12:46	1

Lab Sample ID: MB 240-565563/7
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg			03/16/23 04:15	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg			03/16/23 04:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg			03/16/23 04:15	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg			03/16/23 04:15	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg			03/16/23 04:15	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg			03/16/23 04:15	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg			03/16/23 04:15	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg			03/16/23 04:15	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg			03/16/23 04:15	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg			03/16/23 04:15	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg			03/16/23 04:15	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg			03/16/23 04:15	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg			03/16/23 04:15	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg			03/16/23 04:15	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg			03/16/23 04:15	1
2-Hexanone	ND		0.020	0.0041	mg/Kg			03/16/23 04:15	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg			03/16/23 04:15	1
Acetone	ND		0.025	0.021	mg/Kg			03/16/23 04:15	1
Benzene	ND		0.0050	0.00070	mg/Kg			03/16/23 04:15	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg			03/16/23 04:15	1
Bromoform	ND		0.0050	0.0024	mg/Kg			03/16/23 04:15	1
Bromomethane	ND		0.0050	0.0042	mg/Kg			03/16/23 04:15	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg			03/16/23 04:15	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg			03/16/23 04:15	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg			03/16/23 04:15	1
Chloroethane	ND		0.0050	0.0027	mg/Kg			03/16/23 04:15	1
Chloroform	ND		0.0050	0.00079	mg/Kg			03/16/23 04:15	1
Chloromethane	ND		0.0050	0.0023	mg/Kg			03/16/23 04:15	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg			03/16/23 04:15	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg			03/16/23 04:15	1
Cyclohexane	ND		0.010	0.0014	mg/Kg			03/16/23 04:15	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg			03/16/23 04:15	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg			03/16/23 04:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565563/7
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.0050	0.0010	mg/Kg			03/16/23 04:15	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg			03/16/23 04:15	1
Methyl acetate	ND		0.025	0.0034	mg/Kg			03/16/23 04:15	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg			03/16/23 04:15	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg			03/16/23 04:15	1
Methylene Chloride	ND		0.025	0.012	mg/Kg			03/16/23 04:15	1
Styrene	ND		0.0050	0.0012	mg/Kg			03/16/23 04:15	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg			03/16/23 04:15	1
Toluene	ND		0.0050	0.00077	mg/Kg			03/16/23 04:15	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg			03/16/23 04:15	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg			03/16/23 04:15	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg			03/16/23 04:15	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg			03/16/23 04:15	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg			03/16/23 04:15	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg			03/16/23 04:15	1
Butyl acrylate	ND		0.050	0.019	mg/Kg			03/16/23 04:15	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg			03/16/23 04:15	1
2-Ethylhexyl acrylate	0.0310	J	0.050	0.024	mg/Kg			03/16/23 04:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	81		56 - 125		03/16/23 04:15	1
Dibromofluoromethane (Surr)	74		41 - 138		03/16/23 04:15	1
4-Bromofluorobenzene (Surr)	73		41 - 143		03/16/23 04:15	1
1,2-Dichloroethane-d4 (Surr)	83		58 - 125		03/16/23 04:15	1

Lab Sample ID: LCS 240-565563/6
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0276		mg/Kg		111	74 - 136
1,1,2,2-Tetrachloroethane	0.0250	0.0264		mg/Kg		106	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0298		mg/Kg		119	64 - 148
1,1,2-Trichloroethane	0.0250	0.0259		mg/Kg		104	79 - 120
1,1-Dichloroethane	0.0250	0.0259		mg/Kg		104	74 - 121
1,1-Dichloroethene	0.0250	0.0286		mg/Kg		114	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0245		mg/Kg		98	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0186		mg/Kg		74	52 - 133
Ethylene Dibromide	0.0250	0.0255		mg/Kg		102	80 - 121
1,2-Dichlorobenzene	0.0250	0.0255		mg/Kg		102	73 - 120
1,2-Dichloroethane	0.0250	0.0259		mg/Kg		104	71 - 123
1,2-Dichloropropane	0.0250	0.0252		mg/Kg		101	76 - 126
1,3-Dichlorobenzene	0.0250	0.0247		mg/Kg		99	73 - 120
1,4-Dichlorobenzene	0.0250	0.0246		mg/Kg		98	74 - 120
2-Butanone (MEK)	0.0500	0.0592		mg/Kg		118	63 - 142
2-Hexanone	0.0500	0.0542		mg/Kg		108	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0495		mg/Kg		99	62 - 142
Acetone	0.0500	0.0729		mg/Kg		146	58 - 160

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565563/6
Matrix: Solid
Analysis Batch: 565563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0250	0.0261		mg/Kg		104	76 - 121
Dichlorobromomethane	0.0250	0.0249		mg/Kg		100	71 - 138
Bromoform	0.0250	0.0220		mg/Kg		88	57 - 140
Bromomethane	0.0250	0.0265		mg/Kg		106	10 - 171
Carbon disulfide	0.0250	0.0249		mg/Kg		100	43 - 152
Carbon tetrachloride	0.0250	0.0284		mg/Kg		113	64 - 144
Chlorobenzene	0.0250	0.0250		mg/Kg		100	80 - 120
Chloroethane	0.0250	0.0254		mg/Kg		102	11 - 164
Chloroform	0.0250	0.0271		mg/Kg		108	78 - 120
Chloromethane	0.0250	0.0218		mg/Kg		87	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0264		mg/Kg		106	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0228		mg/Kg		91	70 - 133
Cyclohexane	0.0250	0.0292		mg/Kg		117	65 - 137
Chlorodibromomethane	0.0250	0.0239		mg/Kg		96	68 - 131
Dichlorodifluoromethane	0.0250	0.0215		mg/Kg		86	21 - 150
Ethylbenzene	0.0250	0.0259		mg/Kg		104	80 - 120
Isopropylbenzene	0.0250	0.0281		mg/Kg		112	80 - 130
Methyl acetate	0.0500	0.0529		mg/Kg		106	60 - 133
Methyl tert-butyl ether	0.0250	0.0240		mg/Kg		96	70 - 130
Methylcyclohexane	0.0250	0.0291		mg/Kg		116	70 - 138
Methylene Chloride	0.0250	0.0225	J	mg/Kg		90	71 - 124
Styrene	0.0250	0.0272		mg/Kg		109	75 - 140
Tetrachloroethene	0.0250	0.0272		mg/Kg		109	76 - 127
Toluene	0.0250	0.0269		mg/Kg		108	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0268		mg/Kg		107	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0229		mg/Kg		92	61 - 121
Trichloroethene	0.0250	0.0252		mg/Kg		101	74 - 130
Trichlorofluoromethane	0.0250	0.0267		mg/Kg		107	50 - 154
Vinyl chloride	0.0250	0.0274		mg/Kg		110	49 - 146
Xylenes, Total	0.0500	0.0542		mg/Kg		108	80 - 122
m-Xylene & p-Xylene	0.0250	0.0265		mg/Kg		106	80 - 122
o-Xylene	0.0250	0.0277		mg/Kg		111	80 - 124
Butyl acrylate	0.100	0.0881		mg/Kg		88	10 - 120
Methyl acrylate	0.100	0.0891		mg/Kg		89	10 - 120
2-Ethylhexyl acrylate	0.100	0.103		mg/Kg		103	10 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	83		56 - 125
Dibromofluoromethane (Surr)	81		41 - 138
4-Bromofluorobenzene (Surr)	79		41 - 143
1,2-Dichloroethane-d4 (Surr)	82		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-565464/1-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Atrazine	ND		0.20	0.036	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Carbazole	ND		0.050	0.019	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-565464/1-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Isophorone	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenol	ND		0.050	0.0080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	03/15/23 09:31	03/17/23 12:41	1
Phenol-d5 (Surr)	67		26 - 120	03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene-d5 (Surr)	76		25 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorophenol (Surr)	54		20 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorobiphenyl (Surr)	83		34 - 120	03/15/23 09:31	03/17/23 12:41	1
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/15/23 09:31	03/17/23 12:41	1

Lab Sample ID: LCS 240-565464/2-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.485		mg/Kg		73	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.509		mg/Kg		76	38 - 120
2,4,5-Trichlorophenol	0.667	0.492		mg/Kg		74	50 - 120
2,4,6-Trichlorophenol	0.667	0.451		mg/Kg		68	50 - 120
2,4-Dichlorophenol	0.667	0.485		mg/Kg		73	50 - 120
2,4-Dimethylphenol	0.667	0.419		mg/Kg		63	24 - 120
2,4-Dinitrophenol	1.33	0.317	J	mg/Kg		24	19 - 132
2,4-Dinitrotoluene	0.667	0.568		mg/Kg		85	64 - 120
2,6-Dinitrotoluene	0.667	0.545		mg/Kg		82	62 - 120
2-Chloronaphthalene	0.667	0.474		mg/Kg		71	51 - 120
2-Chlorophenol	0.667	0.510		mg/Kg		76	47 - 120
2-Methylnaphthalene	0.667	0.465		mg/Kg		70	38 - 120
2-Methylphenol	0.667	0.517		mg/Kg		78	45 - 120
2-Nitroaniline	0.667	0.562		mg/Kg		84	57 - 120
2-Nitrophenol	0.667	0.450		mg/Kg		68	51 - 120
3,3'-Dichlorobenzidine	1.33	0.994		mg/Kg		75	27 - 199

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565464

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
3-Nitroaniline	0.667	0.452		mg/Kg		68	41 - 120
4,6-Dinitro-2-methylphenol	1.33	0.552	*	mg/Kg		41	46 - 126
4-Bromophenyl phenyl ether	0.667	0.530		mg/Kg		80	65 - 120
4-Chloro-3-methylphenol	0.667	0.511		mg/Kg		77	51 - 120
4-Chloroaniline	0.667	0.345		mg/Kg		52	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.505		mg/Kg		76	59 - 120
4-Nitroaniline	0.667	0.530		mg/Kg		79	48 - 128
4-Nitrophenol	1.33	1.07		mg/Kg		81	43 - 120
Acenaphthene	0.667	0.505		mg/Kg		76	52 - 120
Acenaphthylene	0.667	0.483		mg/Kg		72	52 - 120
Acetophenone	0.667	0.501		mg/Kg		75	47 - 120
Anthracene	0.667	0.528		mg/Kg		79	64 - 120
Atrazine	1.33	1.27		mg/Kg		96	71 - 125
Benzaldehyde	1.33	1.04		mg/Kg		78	42 - 120
Benzo[a]anthracene	0.667	0.574		mg/Kg		86	70 - 120
Benzo[a]pyrene	0.667	0.500		mg/Kg		75	63 - 125
Benzo[b]fluoranthene	0.667	0.513		mg/Kg		77	64 - 121
Benzo[g,h,i]perylene	0.667	0.478		mg/Kg		72	62 - 120
Benzo[k]fluoranthene	0.667	0.508		mg/Kg		76	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.479		mg/Kg		72	50 - 120
Bis(2-chloroethyl)ether	0.667	0.477		mg/Kg		72	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.606		mg/Kg		91	63 - 133
Butyl benzyl phthalate	0.667	0.604		mg/Kg		91	66 - 127
Caprolactam	1.33	1.16		mg/Kg		87	67 - 120
Carbazole	0.667	0.559		mg/Kg		84	61 - 129
Chrysene	0.667	0.551		mg/Kg		83	67 - 120
Dibenz(a,h)anthracene	0.667	0.491		mg/Kg		74	62 - 120
Dibenzofuran	0.667	0.502		mg/Kg		75	55 - 120
Diethyl phthalate	0.667	0.552		mg/Kg		83	61 - 120
Dimethyl phthalate	0.667	0.535		mg/Kg		80	64 - 120
Di-n-butyl phthalate	0.667	0.578		mg/Kg		87	70 - 129
Di-n-octyl phthalate	0.667	0.539		mg/Kg		81	64 - 129
Fluoranthene	0.667	0.547		mg/Kg		82	71 - 124
Fluorene	0.667	0.510		mg/Kg		76	58 - 120
Hexachlorobenzene	0.667	0.493		mg/Kg		74	59 - 120
Hexachlorobutadiene	0.667	0.436		mg/Kg		65	45 - 120
Hexachlorocyclopentadiene	0.667	0.122	J	mg/Kg		18	10 - 120
Hexachloroethane	0.667	0.402		mg/Kg		60	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.527		mg/Kg		79	65 - 122
Isophorone	0.667	0.486		mg/Kg		73	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.515		mg/Kg		77	48 - 120
N-Nitrosodiphenylamine	0.667	0.543		mg/Kg		81	64 - 120
Naphthalene	0.667	0.445		mg/Kg		67	34 - 120
Nitrobenzene	0.667	0.466		mg/Kg		70	48 - 120
Pentachlorophenol	1.33	0.694		mg/Kg		52	10 - 120
Phenanthrene	0.667	0.523		mg/Kg		78	60 - 120
Phenol	0.667	0.511		mg/Kg		77	48 - 120
Pyrene	0.667	0.576		mg/Kg		86	67 - 120
3 & 4 Methylphenol	0.667	0.526		mg/Kg		79	49 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butoxyethanol	0.667	0.515		mg/Kg		77	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	94		46 - 137
Phenol-d5 (Surr)	86		26 - 120
Nitrobenzene-d5 (Surr)	69		25 - 120
2-Fluorophenol (Surr)	83		20 - 120
2-Fluorobiphenyl (Surr)	77		34 - 120
2,4,6-Tribromophenol (Surr)	74		10 - 120

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-565534/2-A
Matrix: Solid
Analysis Batch: 565757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565534

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/15/23 14:00	03/16/23 13:38	1
Barium	ND		0.50	0.0013	mg/L		03/15/23 14:00	03/16/23 13:38	1
Cadmium	ND		0.050	0.00020	mg/L		03/15/23 14:00	03/16/23 13:38	1
Chromium	ND		0.050	0.0040	mg/L		03/15/23 14:00	03/16/23 13:38	1
Lead	ND		0.050	0.0028	mg/L		03/15/23 14:00	03/16/23 13:38	1
Selenium	ND		0.050	0.0060	mg/L		03/15/23 14:00	03/16/23 13:38	1
Silver	0.000772	J	0.050	0.00062	mg/L		03/15/23 14:00	03/16/23 13:38	1

Lab Sample ID: LCS 240-565534/3-A
Matrix: Solid
Analysis Batch: 565757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565534

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.14		mg/L		107	50 - 150
Barium	2.00	1.92		mg/L		96	50 - 150
Cadmium	1.00	1.01		mg/L		101	50 - 150
Chromium	1.00	0.996		mg/L		100	50 - 150
Lead	1.00	0.918		mg/L		92	50 - 150
Selenium	2.00	2.16		mg/L		108	50 - 150
Silver	0.100	0.109		mg/L		109	50 - 150

Lab Sample ID: LB 240-565373/20-B
Matrix: Solid
Analysis Batch: 565757

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565534

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/15/23 14:00	03/16/23 13:34	1
Barium	0.00213	J	0.50	0.0013	mg/L		03/15/23 14:00	03/16/23 13:34	1
Cadmium	ND		0.050	0.00020	mg/L		03/15/23 14:00	03/16/23 13:34	1
Chromium	ND		0.050	0.0040	mg/L		03/15/23 14:00	03/16/23 13:34	1
Lead	ND		0.050	0.0028	mg/L		03/15/23 14:00	03/16/23 13:34	1
Selenium	ND		0.050	0.0060	mg/L		03/15/23 14:00	03/16/23 13:34	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LB 240-565373/20-B
Matrix: Solid
Analysis Batch: 565757

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565534

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.000805	J	0.050	0.00062	mg/L		03/15/23 14:00	03/16/23 13:34	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-565536/2-A
Matrix: Solid
Analysis Batch: 565701

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565536

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/15/23 16:00	03/16/23 16:01	1

Lab Sample ID: LCS 240-565536/3-A
Matrix: Solid
Analysis Batch: 565701

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565536

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00517		mg/L		103	80 - 120

Lab Sample ID: LB 240-565373/20-C
Matrix: Solid
Analysis Batch: 565701

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565536

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/15/23 16:00	03/16/23 15:59	1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-181838-D-4 DU
Matrix: Solid
Analysis Batch: 565330

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	76.8		82.4		%		7	20
Percent Moisture	23.2		17.6	F3	%		28	20

Lab Sample ID: 240-181838-D-13 DU
Matrix: Solid
Analysis Batch: 565330

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	80.7		83.6		%		4	20
Percent Moisture	19.3		16.4		%		16	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

GC/MS VOA

Prep Batch: 565546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Total/NA	Solid	5035	
MB 240-565546/1-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 565563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Total/NA	Solid	8260D	565546
MB 240-565546/1-A	Method Blank	Total/NA	Solid	8260D	565546
MB 240-565563/7	Method Blank	Total/NA	Solid	8260D	
LCS 240-565563/6	Lab Control Sample	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 565464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Total/NA	Solid	3540C	
MB 240-565464/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	3540C	

Analysis Batch: 565783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Total/NA	Solid	8270E	565464
MB 240-565464/1-A	Method Blank	Total/NA	Solid	8270E	565464
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	8270E	565464

Metals

Leach Batch: 565373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	TCLP	Solid	1311	
LB 240-565373/20-B	Method Blank	TCLP	Solid	1311	
LB 240-565373/20-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 565534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	TCLP	Solid	3010A	565373
LB 240-565373/20-B	Method Blank	TCLP	Solid	3010A	565373
MB 240-565534/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-565534/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 565536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	TCLP	Solid	7470A	565373
LB 240-565373/20-C	Method Blank	TCLP	Solid	7470A	565373
MB 240-565536/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-565536/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 565701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	TCLP	Solid	7470A	565536
LB 240-565373/20-C	Method Blank	TCLP	Solid	7470A	565536
MB 240-565536/2-A	Method Blank	Total/NA	Solid	7470A	565536
LCS 240-565536/3-A	Lab Control Sample	Total/NA	Solid	7470A	565536

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181838-1

Metals

Analysis Batch: 565757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	TCLP	Solid	6010D	565534
LB 240-565373/20-B	Method Blank	TCLP	Solid	6010D	565534
MB 240-565534/2-A	Method Blank	Total/NA	Solid	6010D	565534
LCS 240-565534/3-A	Lab Control Sample	Total/NA	Solid	6010D	565534

General Chemistry

Analysis Batch: 565330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181838-7	WC-S. TRK-EAST-07 (4-6)	Total/NA	Solid	Moisture	
240-181838-D-4 DU	Duplicate	Total/NA	Solid	Moisture	
240-181838-D-13 DU	Duplicate	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565373	KLE	EET CAN	03/14/23 15:55 - 03/15/23 08:20 ¹
TCLP	Prep	3010A			565534	MRL	EET CAN	03/15/23 14:00
TCLP	Analysis	6010D		1	565757	RKT	EET CAN	03/16/23 15:36
TCLP	Leach	1311			565373	KLE	EET CAN	03/14/23 15:55 - 03/15/23 08:20 ¹
TCLP	Prep	7470A			565536	MRL	EET CAN	03/15/23 16:00
TCLP	Analysis	7470A		1	565701	DSH	EET CAN	03/16/23 16:50
Total/NA	Analysis	Moisture		1	565330	MS	EET CAN	03/14/23 12:45

Client Sample ID: WC-S. TRK-EAST-07 (4-6)

Lab Sample ID: 240-181838-7

Date Collected: 03/13/23 13:55

Matrix: Solid

Date Received: 03/13/23 19:30

Percent Solids: 79.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565546	LAM	EET CAN	03/13/23 20:47
Total/NA	Analysis	8260D		1	565563	CS	EET CAN	03/16/23 13:31
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		100	565783	JMG	EET CAN	03/17/23 13:30

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181838-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Regulatory Program: DW NPDES RCRA Other: _____

Project Manager: Jason Artrip Jason.Artrip@arcadis.com

Site Contact: Michelle Grayton Michelle.Grayton@arcadis.com

Lab Contact: Mike DeMonico Mike.DeMonico@arcadis.com

Carrier: 0313123 Date: 0313123

COC No: 1 of 2 COCs

Sampler: Carlie Ward

For Lab Use Only:

Walk-in Client: _____

Lab Sampling: _____

Job / SDG No.: _____

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:
WC-S.Trk-East-01(2-4)	3/13/23	1245	G	S	9	N	N	Total SVOC
WC-S.Trk-East-02(2-4)	3/13/23	1255	G	S	9	N	N	Total SVOC
WC-S.Trk-East-03(2-4)	3/13/23	1310	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-04(2-4)	3/13/23	1320	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-05(4-6)	3/13/23	1335	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-06(4-6)	3/13/23	1345	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-07(4-6)	3/13/23	1355	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-08(4-6)	3/13/23	1410	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-09(6-8)	3/13/23	1420	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-10(6-8)	3/13/23	1430	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-11(6-8)	3/13/23	1445	G	S	9	N	N	TCLP SVOC
WC-S.Trk-East-12(8-10)	3/13/23	1500	G	S	9	N	N	TCLP SVOC



Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: _____

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. **NONE, BUYI ACCIATE**

Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Custody Seal No.: _____

Company: _____

Relinquished by: _____ Date/Time: _____

Relinquished by: _____ Date/Time: _____

Relinquished by: _____ Date/Time: _____

Received in Laboratory by: Jason Artrip Date/Time: 3-13-23 1930

Company: EETNC



Address: EUROFINS

Chain of Custody Record

644933



Environment Testing
America

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact
 Company Name: ARCADIS
 Address: 95 Management Circle Ste 300B
 City/State/Zip: Indianapolis, IN 46203
 Phone: _____
 Fax: _____

Project Name: NORFOLK Southern
 Site: E. PALESTINE OH
 PO # 24030746

Project Manager: Jason Artrip
 Tel/Email: jason.artrip@arcadis.com
 Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below RUSH
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total VOC	Total SVOC	TCLP Metals	TCLP VOC	TCLP SVOC	TCLP Herb	TCLP Pest	Total PCBs
WC-S-TRK-EAST-13 (8-10)	3/13/23	1520	G	S	9	N	N	X	X	X	X	X	X	X	X
WC-S-TRK-EAST-14 (8-10)	3/13/23	1535	G	S	9	N	N	X	X	X	X	X	X	X	X
WC-S-TRK-EAST-COMP (01-07)	3/13/23	X	LAB COMP	S	X	N	N	X	X	X	X	X	X	X	X
WC-S-TRK-EAST-COMP (08-14)	3/13/23	X	LAB COMP	S	X	N	N	X	X	X	X	X	X	X	X

Site Contact: Michele Crayton Date: 3/13/23
 Lab Contact: MIKE DEMMICO Carrier: _____
 COC No.: _____ of 2 COCs
 Sampler: CORIE WARD
 For Lab Use Only:
 Walk-in Client:
 Lab Sampling:
 Job / SDG No.:

Sample Specific Notes:
 Lab to generate composite
 Lab to generate composite
 Lab to generate composite

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 5 GRAB SAMPLES

Relinquished by: _____ Date/Time: _____
 Relinquished by: _____ Date/Time: _____
 Relinquished by: Jason Artrip Date/Time: 3-13-23 1930



Client Arcadis Site Name NSRR-ER Cooler unpacked by: JMR
 Cooler Received on 3-13-23 Opened on 3-13-23
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea
- Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N) # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:

 VOAs
 Oil and Grease
 TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____
 VOA Sample Preservation - Date/Time VOAs Frozen: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

ANALYTICAL REPORT

Preliminary Data

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/21/2023 12:39:07 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181894-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/21/2023 12:39:07 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	19
Surrogate Summary	81
QC Sample Results	85
QC Association Summary	107
Lab Chronicle	115
Certification Summary	124
Chain of Custody	126
Receipt Checklists	132
Isotope Dilution Summary	134

Preliminary Data

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Job ID: 240-181894-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181894-1

Receipt

The samples were received on 3/14/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.5°C, 3.8°C and 4.0°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-565827 was outside the method criteria for the following analyte(s): Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The following sample(s) were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-S. TRK-WEST-01 (2-4) (240-181894-1), WC-S. TRK-WEST-02 (6-8) (240-181894-2), WC-S. TRK-WEST-03 (2-4) (240-181894-3), WC-S. TRK-WEST-04 (4-6) (240-181894-4), WC-S. TRK-WEST-05 (4-6) (240-181894-5), WC-S. TRK-WEST-06 (6-8) (240-181894-6), WC-S. TRK-WEST-07 (8-10) (240-181894-7), WC-S. TRK-WEST-08 (8-10) (240-181894-9), WC-S. TRK-WEST-09 (10-12) (240-181894-10), WC-S. TRK-WEST-10 (10-12) (240-181894-11), WC-S. TRK-WEST-11 (12-14) (240-181894-12), WC-S. TRK-WEST-12 (12-14) (240-181894-13), WC-S. TRK-WEST-13 (14-16) (240-181894-14), WC-S. TRK-WEST-14 (14-16) (240-181894-15), (240-181894-C-15 MS) and (240-181894-C-15 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-565699 recovered above the upper control limit for Bromomethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The MS/MSD for preparation batch 240-565503 and analytical batch 240-565878 is not reported because it was analyzed in another batch.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-565878 recovered above the upper control limit for Bromomethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: A MS/MSD was prepared for batch 240-565503, but was analyzed in a different analytical batch. WC-S. TRK-WEST-07 (8-10) (240-181894-7)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-565910 recovered outside acceptance criteria, low biased, for Pentachlorophenol. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for the analyte, the data are reported. The following samples were impacted: WC-S. TRK-WEST-COMP (01-07) (240-181894-8), WC-S. TRK-WEST-COMP (08-14) (240-181894-16) and (240-181902-A-1-J).

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-S. TRK-WEST-01 (2-4) (240-181894-1), WC-S. TRK-WEST-02 (6-8) (240-181894-2) and WC-S. TRK-WEST-04 (4-6) (240-181894-4). Elevated reporting limits (RLs) are provided.

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-S. TRK-WEST-03 (2-4) (240-181894-3), WC-S. TRK-WEST-05 (4-6) (240-181894-5), WC-S. TRK-WEST-06 (6-8) (240-181894-6), WC-S. TRK-WEST-07 (8-10) (240-181894-7), WC-S. TRK-WEST-08 (8-10) (240-181894-9), WC-S. TRK-WEST-09 (10-12) (240-181894-10), WC-S. TRK-WEST-10 (10-12) (240-181894-11), WC-S. TRK-WEST-11 (12-14) (240-181894-12), WC-S. TRK-WEST-12 (12-14) (240-181894-13), WC-S. TRK-WEST-13 (14-16) (240-181894-14) and WC-S. TRK-WEST-14 (14-16) (240-181894-15). Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Job ID: 240-181894-1 (Continued)

Laboratory: Eurofins Canton (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-S. TRK-WEST-COMP (01-07) (240-181894-8) and WC-S. TRK-WEST-COMP (08-14) (240-181894-16).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Pesticides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PRELIMINARY DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Solid	03/14/23 10:44	03/14/23 19:20
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Solid	03/14/23 11:15	03/14/23 19:20
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Solid	03/14/23 11:45	03/14/23 19:20
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Solid	03/14/23 12:00	03/14/23 19:20
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Solid	03/14/23 12:15	03/14/23 19:20
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Solid	03/14/23 12:50	03/14/23 19:20
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Solid	03/14/23 13:10	03/14/23 19:20
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Solid	03/14/23 00:00	03/14/23 19:20
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Solid	03/14/23 14:15	03/14/23 19:20
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Solid	03/14/23 14:35	03/14/23 19:20
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Solid	03/14/23 15:30	03/14/23 19:20
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Solid	03/14/23 15:51	03/14/23 19:20
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Solid	03/14/23 15:51	03/14/23 19:20
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Solid	03/14/23 16:10	03/14/23 19:20
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Solid	03/14/23 16:30	03/14/23 19:20
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Solid	03/14/23 00:00	03/14/23 19:20

Preliminary

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.34	J	0.54	0.071	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.78		0.27	0.13	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.21	J	0.54	0.098	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	680		180	97	mg/Kg	66.6666	✳	8260D	Total/NA
2-Ethylhexyl acrylate	170	J	180	130	mg/Kg	66.6666	✳	8260D	Total/NA
2-Methylnaphthalene	0.52		0.18	0.024	mg/Kg	10	✳	8270E	Total/NA
Acenaphthene	0.14	J	0.18	0.035	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.067	J	0.18	0.048	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.23		0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.40		0.18	0.041	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.29		0.18	0.11	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.45		0.18	0.079	mg/Kg	10	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.21		0.18	0.086	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.19		0.18	0.084	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.52		0.18	0.018	mg/Kg	10	✳	8270E	Total/NA
Dibenzofuran	0.24	J	0.60	0.16	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.98		0.18	0.054	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.11	J	0.18	0.033	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.18		0.18	0.089	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.36		0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.83		0.18	0.027	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.80		0.18	0.026	mg/Kg	10	✳	8270E	Total/NA
2-Butoxyethanol	4.3		0.85	0.79	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.47	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.42	J	0.79	0.26	mg/Kg	1	✳	8260D	Total/NA
Ethylbenzene	0.14	J	0.40	0.075	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.11	J	0.40	0.060	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.68	J	2.0	0.27	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	1.6		0.79	0.10	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	1.3		0.79	0.14	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	11		7.9	4.3	mg/Kg	2	✳	8260D	Total/NA
2-Ethylhexyl acrylate	40		9.9	7.4	mg/Kg	2.5	✳	8260D	Total/NA
1,1'-Biphenyl	0.22	J	0.63	0.21	mg/Kg	10	✳	8270E	Total/NA
2-Methylnaphthalene	2.1		0.19	0.025	mg/Kg	10	✳	8270E	Total/NA
Acenaphthene	0.70		0.19	0.036	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.55		0.19	0.050	mg/Kg	10	✳	8270E	Total/NA
Anthracene	1.2		0.19	0.030	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	2.6		0.19	0.043	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	2.8		0.19	0.12	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	5.0		0.19	0.082	mg/Kg	10	✳	8270E	Total/NA
Benzo[g,h,i]perylene	2.3		0.19	0.089	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.8		0.19	0.087	mg/Kg	10	✳	8270E	Total/NA
Carbazole	0.39	J	0.63	0.24	mg/Kg	10	✳	8270E	Total/NA
Chrysene	4.1		0.19	0.019	mg/Kg	10	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.51		0.19	0.087	mg/Kg	10	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-02 (6-8) (Continued)

Lab Sample ID: 240-181894-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dibenzofuran	0.93		0.63	0.16	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	5.1		0.19	0.056	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.65		0.19	0.034	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	2.0		0.19	0.092	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	1.7		0.19	0.030	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	3.7		0.19	0.028	mg/Kg	10	✳	8270E	Total/NA
Pyrene	4.6		0.19	0.027	mg/Kg	10	✳	8270E	Total/NA
2-Butoxyethanol	2.4		0.88	0.82	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.0084	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.43	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0016	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.017	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.47	J	0.68	0.22	mg/Kg	1	✳	8260D	Total/NA
Ethylbenzene	0.095	J	0.34	0.064	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.094	J	0.34	0.052	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	1.6		0.68	0.090	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	1.0		0.68	0.12	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.29	J	0.31	0.11	mg/Kg	5	✳	8270E	Total/NA
2-Methylnaphthalene	3.2		0.094	0.012	mg/Kg	5	✳	8270E	Total/NA
Acenaphthene	0.34		0.094	0.018	mg/Kg	5	✳	8270E	Total/NA
Acenaphthylene	0.51		0.094	0.025	mg/Kg	5	✳	8270E	Total/NA
Anthracene	0.97		0.094	0.015	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]anthracene	2.3		0.094	0.021	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]pyrene	2.4		0.094	0.058	mg/Kg	5	✳	8270E	Total/NA
Benzo[b]fluoranthene	4.7		0.094	0.041	mg/Kg	5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	2.2		0.094	0.044	mg/Kg	5	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.3		0.094	0.043	mg/Kg	5	✳	8270E	Total/NA
Carbazole	0.26	J	0.31	0.12	mg/Kg	5	✳	8270E	Total/NA
Chrysene	3.9		0.094	0.0093	mg/Kg	5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.59		0.094	0.043	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	1.1		0.31	0.081	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	3.7		0.094	0.028	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.31		0.094	0.017	mg/Kg	5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.8		0.094	0.046	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	2.6		0.094	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	2.3		0.094	0.014	mg/Kg	5	✳	8270E	Total/NA
Pyrene	3.9		0.094	0.013	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	0.83		0.44	0.41	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.54	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0017	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0066	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.077	J	0.30	0.056	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	1.5		1.5	0.20	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-04 (4-6) (Continued)

Lab Sample ID: 240-181894-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.31	J	0.59	0.078	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.52	J	0.59	0.11	mg/Kg	1	✳	8260D	Total/NA
Methyl acrylate	53		2.4	0.56	mg/Kg	4	✳	8260D	Total/NA
2-Ethylhexyl acrylate	28		12	8.8	mg/Kg	4	✳	8260D	Total/NA
2-Methylnaphthalene	0.39		0.16	0.021	mg/Kg	10	✳	8270E	Total/NA
Acenaphthene	0.067	J	0.16	0.031	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.058	J	0.16	0.044	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.10	J	0.16	0.026	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.23		0.16	0.037	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	0.19		0.16	0.10	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.47		0.16	0.071	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.11	J	0.16	0.075	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.36		0.16	0.016	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.51		0.16	0.048	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.055	J	0.16	0.030	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.13	J	0.16	0.080	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.29		0.16	0.026	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.37		0.16	0.024	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.47		0.16	0.023	mg/Kg	10	✳	8270E	Total/NA
2-Butoxyethanol	3.0		0.76	0.71	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.34	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00027	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.19		0.050	0.0040	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.29	J	1.2	0.28	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	0.29	J	0.58	0.19	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	1.0		0.58	0.076	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.56	J	0.58	0.11	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	9.0		2.9	1.6	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.13	J	0.25	0.084	mg/Kg	4	✳	8270E	Total/NA
2-Methylnaphthalene	1.2		0.074	0.0097	mg/Kg	4	✳	8270E	Total/NA
Acenaphthene	0.15		0.074	0.014	mg/Kg	4	✳	8270E	Total/NA
Acenaphthylene	0.17		0.074	0.020	mg/Kg	4	✳	8270E	Total/NA
Anthracene	1.4		0.074	0.012	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	1.2		0.074	0.017	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.74		0.074	0.046	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.4		0.074	0.032	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.52		0.074	0.035	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.47		0.074	0.034	mg/Kg	4	✳	8270E	Total/NA
Carbazole	0.18	J	0.25	0.094	mg/Kg	4	✳	8270E	Total/NA
Chrysene	1.8		0.074	0.0074	mg/Kg	4	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.13		0.074	0.034	mg/Kg	4	✳	8270E	Total/NA
Dibenzofuran	0.53		0.25	0.064	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	3.0		0.074	0.022	mg/Kg	4	✳	8270E	Total/NA
Fluorene	0.16		0.074	0.014	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.44		0.074	0.036	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.66		0.074	0.012	mg/Kg	4	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6) (Continued)

Lab Sample ID: 240-181894-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	1.8		0.074	0.011	mg/Kg	4	☼	8270E	Total/NA
Pyrene	2.5		0.074	0.011	mg/Kg	4	☼	8270E	Total/NA
2-Butoxyethanol	2.9		0.35	0.32	mg/Kg	4	☼	8270E	Total/NA
Arsenic	0.013	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.73	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0016	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.012	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.12	J	0.68	0.090	mg/Kg	1	☼	8260D	Total/NA
Butyl acrylate	11		3.4	1.8	mg/Kg	1	☼	8260D	Total/NA
Methyl acrylate	0.17	J	0.68	0.16	mg/Kg	1	☼	8260D	Total/NA
2-Ethylhexyl acrylate	6.0		3.4	2.5	mg/Kg	1	☼	8260D	Total/NA
1,1'-Biphenyl	0.042	J	0.062	0.021	mg/Kg	1	☼	8270E	Total/NA
2-Methylnaphthalene	0.61		0.019	0.0024	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.060		0.019	0.0036	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.029		0.019	0.0050	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.090		0.019	0.0030	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.13		0.019	0.0042	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.099		0.019	0.012	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.21		0.019	0.0081	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.084		0.019	0.0088	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.066		0.019	0.0086	mg/Kg	1	☼	8270E	Total/NA
Carbazole	0.038	J	0.062	0.024	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.20		0.019	0.0019	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.15		0.062	0.016	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.28		0.019	0.0055	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.050		0.019	0.0034	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.062		0.019	0.0091	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.33		0.019	0.0030	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.48		0.019	0.0028	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.26		0.019	0.0027	mg/Kg	1	☼	8270E	Total/NA
2-Butoxyethanol	0.68		0.087	0.081	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.012	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.82	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0084	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloroethane	0.061	J	0.26	0.059	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.19	J	0.26	0.043	mg/Kg	1	☼	8260D	Total/NA
Cyclohexane	0.18	J	0.51	0.17	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.053	J	0.26	0.048	mg/Kg	1	☼	8260D	Total/NA
Isopropylbenzene	0.055	J	0.26	0.039	mg/Kg	1	☼	8260D	Total/NA
Methylcyclohexane	0.67		0.51	0.068	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.40	J	0.51	0.094	mg/Kg	1	☼	8260D	Total/NA
Butyl acrylate	1200		260	140	mg/Kg	100	☼	8260D	Total/NA
2-Methylnaphthalene	0.69	J	0.94	0.12	mg/Kg	50	☼	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10) (Continued)

Lab Sample ID: 240-181894-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Anthracene	0.23	J	0.94	0.15	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	0.67	J	0.94	0.21	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.82	J	0.94	0.41	mg/Kg	50	✳	8270E	Total/NA
Chrysene	0.96		0.94	0.094	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	1.3		0.94	0.28	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	0.90	J	0.94	0.14	mg/Kg	50	✳	8270E	Total/NA
Pyrene	1.2		0.94	0.13	mg/Kg	50	✳	8270E	Total/NA
2-Butoxyethanol	67		4.4	4.1	mg/Kg	50	✳	8270E	Total/NA
Arsenic	0.014	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.52	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.028	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.049	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.023	J B	0.25	0.0012	mg/L	1		8260D	TCLP
1,2,3,4,6,7,8-HpCDD	140	B	6.0	0.17	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	25	B	6.0	0.078	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	6.0	B	6.0	0.050	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	7.1		6.0	0.094	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	5.3	J B	6.0	0.10	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	7.4	B	6.0	0.045	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	5.5	J B	6.0	0.087	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	4.1	J I B	6.0	0.052	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	3.9	J I B	6.0	0.077	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	5.4	J B	6.0	0.044	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	5.1	J B	6.0	0.11	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	5.8	J B	6.0	0.088	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	6.6	B	6.0	0.060	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	1.9		1.2	0.058	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	1.9	B	1.2	0.20	ng/Kg	1	✳	8290A	Total/NA
OCDD	1100	B	12	0.22	ng/Kg	1	✳	8290A	Total/NA
OCDF	81	B	12	0.089	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	72	I B	6.0	0.046	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	57	I B	6.0	0.094	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	140	B	6.0	0.17	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	75	B	6.0	0.091	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	14	I B	6.0	0.052	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	47	I B	6.0	0.068	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	7.3	I B	1.2	0.058	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	13	I B	1.2	0.20	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.084	J	0.40	0.076	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.098	J	0.40	0.061	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.38	J	2.0	0.27	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.91		0.80	0.11	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.80		0.80	0.15	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10) (Continued)

Lab Sample ID: 240-181894-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Butyl acrylate	25		21	11	mg/Kg	5.26315	✳	8260D	Total/NA
						789			
2-Ethylhexyl acrylate	98		21	16	mg/Kg	5.26315	✳	8260D	Total/NA
						789			
1,1'-Biphenyl	0.072	J	0.16	0.054	mg/Kg	2.5	✳	8270E	Total/NA
2-Methylnaphthalene	0.68		0.048	0.0062	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthene	0.16		0.048	0.0091	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthylene	0.18		0.048	0.013	mg/Kg	2.5	✳	8270E	Total/NA
Anthracene	0.39		0.048	0.0076	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]anthracene	0.98		0.048	0.011	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]pyrene	0.67		0.048	0.030	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.5		0.048	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.43		0.048	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.45		0.048	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Carbazole	0.15	J	0.16	0.060	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	1.3		0.048	0.0047	mg/Kg	2.5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.13		0.048	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.31		0.16	0.041	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	1.7		0.048	0.014	mg/Kg	2.5	✳	8270E	Total/NA
Fluorene	0.17		0.048	0.0087	mg/Kg	2.5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.42		0.048	0.023	mg/Kg	2.5	✳	8270E	Total/NA
Naphthalene	0.41		0.048	0.0076	mg/Kg	2.5	✳	8270E	Total/NA
Phenanthrene	1.1		0.048	0.0071	mg/Kg	2.5	✳	8270E	Total/NA
Pyrene	1.7		0.048	0.0068	mg/Kg	2.5	✳	8270E	Total/NA
2-Butoxyethanol	2.4		0.22	0.21	mg/Kg	2.5	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.60	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	0.055	J	0.34	0.052	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.69		0.69	0.091	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.42	J	0.69	0.13	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	41		17	9.3	mg/Kg	5	✳	8260D	Total/NA
2-Ethylhexyl acrylate	99		34	26	mg/Kg	10	✳	8260D	Total/NA
1,1'-Biphenyl	0.074	J	0.15	0.052	mg/Kg	2.5	✳	8270E	Total/NA
2-Methylnaphthalene	0.55		0.046	0.0060	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthene	0.11		0.046	0.0088	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthylene	0.10		0.046	0.012	mg/Kg	2.5	✳	8270E	Total/NA
Anthracene	0.28		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]anthracene	0.83		0.046	0.010	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]pyrene	0.55		0.046	0.029	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.0		0.046	0.020	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.31		0.046	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.41		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Carbazole	0.15		0.15	0.058	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	1.1		0.046	0.0046	mg/Kg	2.5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.092		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.30		0.15	0.040	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	1.7		0.046	0.014	mg/Kg	2.5	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12) (Continued)

Lab Sample ID: 240-181894-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluorene	0.17		0.046	0.0084	mg/Kg	2.5	✘	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.27		0.046	0.023	mg/Kg	2.5	✘	8270E	Total/NA
Naphthalene	0.35		0.046	0.0074	mg/Kg	2.5	✘	8270E	Total/NA
Phenanthrene	1.0		0.046	0.0069	mg/Kg	2.5	✘	8270E	Total/NA
Pyrene	1.6		0.046	0.0066	mg/Kg	2.5	✘	8270E	Total/NA
2-Butoxyethanol	2.5		0.22	0.20	mg/Kg	2.5	✘	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.50	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.26	J	0.68	0.22	mg/Kg	1	✘	8260D	Total/NA
Isopropylbenzene	0.058	J	0.34	0.052	mg/Kg	1	✘	8260D	Total/NA
Methylcyclohexane	0.99		0.68	0.090	mg/Kg	1	✘	8260D	Total/NA
Xylenes, Total	0.52	J	0.68	0.12	mg/Kg	1	✘	8260D	Total/NA
Butyl acrylate	3.3	J	3.4	1.8	mg/Kg	1	✘	8260D	Total/NA
2-Ethylhexyl acrylate	11		3.4	2.5	mg/Kg	1	✘	8260D	Total/NA
2-Methylnaphthalene	1.0	J	1.8	0.24	mg/Kg	100	✘	8270E	Total/NA
Fluoranthene	1.1	J	1.8	0.55	mg/Kg	100	✘	8270E	Total/NA
Phenanthrene	0.91	J	1.8	0.27	mg/Kg	100	✘	8270E	Total/NA
Pyrene	1.0	J	1.8	0.26	mg/Kg	100	✘	8270E	Total/NA
2-Butoxyethanol	130		8.6	8.1	mg/Kg	100	✘	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.36	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.62	J	0.73	0.097	mg/Kg	1	✘	8260D	Total/NA
Vinyl chloride	0.24	J	0.37	0.18	mg/Kg	1	✘	8260D	Total/NA
Xylenes, Total	0.41	J	0.73	0.13	mg/Kg	1	✘	8260D	Total/NA
Butyl acrylate	40		31	17	mg/Kg	8.3333	✘	8260D	Total/NA
2-Ethylhexyl acrylate	130		31	23	mg/Kg	8.3333	✘	8260D	Total/NA
2-Methylnaphthalene	0.76		0.096	0.013	mg/Kg	5	✘	8270E	Total/NA
Acenaphthene	0.074	J	0.096	0.018	mg/Kg	5	✘	8270E	Total/NA
Acenaphthylene	0.12		0.096	0.026	mg/Kg	5	✘	8270E	Total/NA
Anthracene	0.17		0.096	0.015	mg/Kg	5	✘	8270E	Total/NA
Benzo[a]anthracene	0.40		0.096	0.022	mg/Kg	5	✘	8270E	Total/NA
Benzo[a]pyrene	0.35		0.096	0.060	mg/Kg	5	✘	8270E	Total/NA
Benzo[b]fluoranthene	0.82		0.096	0.042	mg/Kg	5	✘	8270E	Total/NA
Benzo[g,h,i]perylene	0.26		0.096	0.046	mg/Kg	5	✘	8270E	Total/NA
Benzo[k]fluoranthene	0.21		0.096	0.045	mg/Kg	5	✘	8270E	Total/NA
Chrysene	0.63		0.096	0.0096	mg/Kg	5	✘	8270E	Total/NA
Dibenzofuran	0.28	J	0.32	0.084	mg/Kg	5	✘	8270E	Total/NA
Fluoranthene	0.69		0.096	0.029	mg/Kg	5	✘	8270E	Total/NA
Fluorene	0.079	J	0.096	0.018	mg/Kg	5	✘	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.25		0.096	0.047	mg/Kg	5	✘	8270E	Total/NA
Naphthalene	0.49		0.096	0.015	mg/Kg	5	✘	8270E	Total/NA
Phenanthrene	0.71		0.096	0.014	mg/Kg	5	✘	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14) (Continued)

Lab Sample ID: 240-181894-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pyrene	0.68		0.096	0.014	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	5.0		0.45	0.42	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.012	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.86	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.12	J	0.29	0.049	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.62	J	1.5	0.20	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.28	J	0.58	0.077	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	2.2		0.29	0.14	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.19	J	0.58	0.11	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	67		49	26	mg/Kg	16.6666	✳	8260D	Total/NA
2-Ethylhexyl acrylate	190		49	36	mg/Kg	16.6666	✳	8260D	Total/NA
2-Methylnaphthalene	0.41		0.37	0.049	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.11	J	0.37	0.10	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.28	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	1.4		0.37	0.085	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.53		0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.34	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.54		0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.0		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.4		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.11	J	0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.34	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.27	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	0.78		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	2.1		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
2-Butoxyethanol	18		1.7	1.6	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.48	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl acetate	0.23	J	1.6	0.22	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.41	J	0.65	0.086	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.31	J	0.65	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	61		54	29	mg/Kg	16.6666	✳	8260D	Total/NA
2-Ethylhexyl acrylate	160		54	40	mg/Kg	16.6666	✳	8260D	Total/NA
1,1'-Biphenyl	0.068	J	0.15	0.052	mg/Kg	2.5	✳	8270E	Total/NA
2-Methylnaphthalene	0.70		0.046	0.0060	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthene	0.12		0.046	0.0088	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthylene	0.16		0.046	0.012	mg/Kg	2.5	✳	8270E	Total/NA
Anthracene	0.28		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]anthracene	0.62		0.046	0.010	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]pyrene	0.51		0.046	0.029	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.2		0.046	0.020	mg/Kg	2.5	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16) (Continued)

Lab Sample ID: 240-181894-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[g,h,i]perylene	0.35		0.046	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.32		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Carbazole	0.14	J	0.15	0.058	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	0.98		0.046	0.0046	mg/Kg	2.5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.12		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.28		0.15	0.040	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	1.2		0.046	0.014	mg/Kg	2.5	✳	8270E	Total/NA
Fluorene	0.14		0.046	0.0084	mg/Kg	2.5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.37		0.046	0.023	mg/Kg	2.5	✳	8270E	Total/NA
Naphthalene	0.43		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Phenanthrene	0.91		0.046	0.0069	mg/Kg	2.5	✳	8270E	Total/NA
Pyrene	1.2		0.046	0.0066	mg/Kg	2.5	✳	8270E	Total/NA
2-Butoxyethanol	3.0		0.22	0.20	mg/Kg	2.5	✳	8270E	Total/NA
Arsenic	0.013	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.53	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0036	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.35	J	1.4	0.33	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.068	J	0.34	0.058	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.059	J	0.34	0.052	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.71		0.69	0.091	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.25	J	0.34	0.17	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.55	J	0.69	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	340		340	190	mg/Kg	100	✳	8260D	Total/NA
2-Ethylhexyl acrylate	720		340	260	mg/Kg	100	✳	8260D	Total/NA
2-Methylnaphthalene	0.74	J	2.0	0.26	mg/Kg	100	✳	8270E	Total/NA
Anthracene	0.49	J	2.0	0.32	mg/Kg	100	✳	8270E	Total/NA
Benzo[a]anthracene	1.6	J	2.0	0.45	mg/Kg	100	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.8	J	2.0	0.85	mg/Kg	100	✳	8270E	Total/NA
Chrysene	1.8	J	2.0	0.19	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	3.8		2.0	0.58	mg/Kg	100	✳	8270E	Total/NA
Naphthalene	0.58	J	2.0	0.32	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	1.5	J	2.0	0.29	mg/Kg	100	✳	8270E	Total/NA
Pyrene	3.8		2.0	0.28	mg/Kg	100	✳	8270E	Total/NA
2-Butoxyethanol	120		9.2	8.6	mg/Kg	100	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.44	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0016	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.013	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Sample Analysis Not Complete.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 83.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.27	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,1,2,2-Tetrachloroethane	ND		0.27	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.27	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,1,2-Trichloroethane	ND		0.27	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,1-Dichloroethane	ND		0.27	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,1-Dichloroethene	ND		0.27	0.088	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,2,4-Trichlorobenzene	ND		0.27	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,2-Dibromo-3-Chloropropane	ND		0.54	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Ethylene Dibromide	ND		0.27	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,2-Dichlorobenzene	ND		0.27	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,2-Dichloroethane	ND		0.27	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,2-Dichloropropane	ND		0.27	0.040	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,3-Dichlorobenzene	ND		0.27	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
1,4-Dichlorobenzene	ND		0.27	0.059	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
2-Butanone (MEK)	ND		1.1	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
2-Hexanone	ND		1.1	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
4-Methyl-2-pentanone (MIBK)	ND		1.1	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Acetone	ND		1.1	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Benzene	ND		0.27	0.045	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Dichlorobromomethane	ND		0.27	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Bromoform	ND		0.27	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Bromomethane	ND		0.27	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Carbon disulfide	ND		0.27	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Carbon tetrachloride	ND		0.27	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Chlorobenzene	ND		0.27	0.038	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Chloroethane	ND		0.27	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Chloroform	ND		0.27	0.058	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Chloromethane	ND		0.27	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
cis-1,2-Dichloroethene	ND		0.27	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
cis-1,3-Dichloropropene	ND		0.27	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Cyclohexane	ND		0.54	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Chlorodibromomethane	ND		0.27	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Dichlorodifluoromethane	ND		0.27	0.057	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Ethylbenzene	ND		0.27	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Isopropylbenzene	ND		0.27	0.041	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Methyl acetate	ND		1.3	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Methyl tert-butyl ether	ND		0.27	0.040	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Methylcyclohexane	0.34	J	0.54	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Methylene Chloride	ND		0.54	0.41	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Styrene	ND		0.27	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Tetrachloroethene	ND		0.27	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Toluene	ND		0.27	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
trans-1,2-Dichloroethene	ND		0.27	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
trans-1,3-Dichloropropene	ND		0.27	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Trichloroethene	ND		0.27	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Trichlorofluoromethane	ND		0.27	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Vinyl chloride	0.78		0.27	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Xylenes, Total	0.21	J	0.54	0.098	mg/Kg	✱	03/15/23 13:01	03/17/23 10:07	1
Butyl acrylate	680		180	97	mg/Kg	✱	03/15/23 13:01	03/16/23 20:50	66.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 83.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		36	8.5	mg/Kg	✱	03/15/23 13:01	03/16/23 20:50	66.6666
2-Ethylhexyl acrylate	170	J	180	130	mg/Kg	✱	03/15/23 13:01	03/16/23 20:50	66.6666

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		56 - 125				03/15/23 13:01	03/16/23 20:50	66.6666
Toluene-d8 (Surr)	97		56 - 125				03/15/23 13:01	03/17/23 10:07	1
Dibromofluoromethane (Surr)	96		41 - 138				03/15/23 13:01	03/16/23 20:50	66.6666
Dibromofluoromethane (Surr)	81		41 - 138				03/15/23 13:01	03/17/23 10:07	1
4-Bromofluorobenzene (Surr)	118		41 - 143				03/15/23 13:01	03/16/23 20:50	66.6666
4-Bromofluorobenzene (Surr)	89		41 - 143				03/15/23 13:01	03/17/23 10:07	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125				03/15/23 13:01	03/16/23 20:50	66.6666
1,2-Dichloroethane-d4 (Surr)	79		58 - 125				03/15/23 13:01	03/17/23 10:07	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.60	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4,5-Trichlorophenol	ND		1.8	0.83	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4,6-Trichlorophenol	ND		1.8	0.77	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4-Dichlorophenol	ND		1.8	0.53	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4-Dimethylphenol	ND		1.8	0.48	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4-Dinitrophenol	ND		4.0	1.7	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,4-Dinitrotoluene	ND		2.4	0.75	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2,6-Dinitrotoluene	ND		2.4	0.68	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Chloronaphthalene	ND		0.60	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Chlorophenol	ND		0.60	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Methylnaphthalene	0.52		0.18	0.024	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Methylphenol	ND		2.4	0.37	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Nitroaniline	ND		2.4	0.48	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Nitrophenol	ND		0.60	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
3,3'-Dichlorobenzidine	ND		1.2	0.52	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
3-Nitroaniline	ND		2.4	0.59	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4,6-Dinitro-2-methylphenol	ND		4.0	0.97	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Bromophenyl phenyl ether	ND		0.60	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Chloro-3-methylphenol	ND		1.8	0.54	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Chloroaniline	ND		1.8	0.36	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Chlorophenyl phenyl ether	ND		0.60	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Nitroaniline	ND		2.4	0.72	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
4-Nitrophenol	ND		4.0	1.1	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Acenaphthene	0.14	J	0.18	0.035	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Acenaphthylene	0.067	J	0.18	0.048	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Acetophenone	ND		1.2	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Anthracene	0.23		0.18	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Atrazine	ND		2.4	0.43	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzaldehyde	ND		1.2	0.28	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzo[a]anthracene	0.40		0.18	0.041	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzo[a]pyrene	0.29		0.18	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzo[b]fluoranthene	0.45		0.18	0.079	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzo[g,h,i]perylene	0.21		0.18	0.086	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Benzo[k]fluoranthene	0.19		0.18	0.084	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 83.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		1.2	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Bis(2-chloroethyl)ether	ND		1.2	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Bis(2-ethylhexyl) phthalate	ND		0.85	0.62	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Butyl benzyl phthalate	ND		0.85	0.27	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Caprolactam	ND		4.0	0.91	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Carbazole	ND		0.60	0.23	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Chrysene	0.52		0.18	0.018	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Dibenz(a,h)anthracene	ND		0.18	0.084	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Dibenzofuran	0.24 J		0.60	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Diethyl phthalate	ND		0.85	0.37	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Dimethyl phthalate	ND		0.85	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Di-n-butyl phthalate	ND		0.85	0.61	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Di-n-octyl phthalate	ND		0.85	0.34	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Fluoranthene	0.98		0.18	0.054	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Fluorene	0.11 J		0.18	0.033	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Hexachlorobenzene	ND		0.18	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Hexachlorobutadiene	ND		0.60	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Hexachlorocyclopentadiene	ND		4.0	0.75	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Hexachloroethane	ND		0.60	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Indeno[1,2,3-cd]pyrene	0.18		0.18	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Isophorone	ND		0.60	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
N-Nitrosodi-n-propylamine	ND		0.60	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
N-Nitrosodiphenylamine	ND		0.60	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Naphthalene	0.36		0.18	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Nitrobenzene	ND		1.2	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Pentachlorophenol	ND		1.8	0.70	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Phenanthrene	0.83		0.18	0.027	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Phenol	ND		0.60	0.097	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
Pyrene	0.80		0.18	0.026	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
3 & 4 Methylphenol	ND		4.8	0.35	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10
2-Butoxyethanol	4.3		0.85	0.79	mg/Kg	✱	03/15/23 09:31	03/17/23 19:37	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	44	S1-	46 - 137	03/15/23 09:31	03/17/23 19:37	10
Phenol-d5 (Surr)	52		26 - 120	03/15/23 09:31	03/17/23 19:37	10
Nitrobenzene-d5 (Surr)	39		25 - 120	03/15/23 09:31	03/17/23 19:37	10
2-Fluorophenol (Surr)	44		20 - 120	03/15/23 09:31	03/17/23 19:37	10
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 19:37	10
2,4,6-Tribromophenol (Surr)	33		10 - 120	03/15/23 09:31	03/17/23 19:37	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:10	1
Barium	0.47	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:10	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:10	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:10	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:10	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:10	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:10	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 83.3

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.3		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	16.7		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.40	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,1,2,2-Tetrachloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,1,2-Trichloroethane	ND		0.40	0.090	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,1-Dichloroethane	ND		0.40	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,1-Dichloroethene	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,2,4-Trichlorobenzene	ND		0.40	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,2-Dibromo-3-Chloropropane	ND		0.79	0.35	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Ethylene Dibromide	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,2-Dichlorobenzene	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,2-Dichloroethane	ND		0.40	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,2-Dichloropropane	ND		0.40	0.059	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,3-Dichlorobenzene	ND		0.40	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
1,4-Dichlorobenzene	ND		0.40	0.087	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
2-Butanone (MEK)	ND		1.6	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
2-Hexanone	ND		1.6	0.42	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
4-Methyl-2-pentanone (MIBK)	ND		1.6	0.38	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Acetone	ND		1.6	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Benzene	ND		0.40	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Dichlorobromomethane	ND		0.40	0.097	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Bromoform	ND		0.40	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Bromomethane	ND		0.40	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Carbon disulfide	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Carbon tetrachloride	ND		0.40	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Chlorobenzene	ND		0.40	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Chloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Chloroform	ND		0.40	0.086	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Chloromethane	ND		0.40	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
cis-1,2-Dichloroethene	ND		0.40	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
cis-1,3-Dichloropropene	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Cyclohexane	0.42	J	0.79	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Chlorodibromomethane	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Dichlorodifluoromethane	ND		0.40	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Ethylbenzene	0.14	J	0.40	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Isopropylbenzene	0.11	J	0.40	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Methyl acetate	0.68	J	2.0	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Methyl tert-butyl ether	ND		0.40	0.059	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Methylcyclohexane	1.6		0.79	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Methylene Chloride	ND		0.79	0.61	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Styrene	ND		0.40	0.083	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Tetrachloroethene	ND		0.40	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Toluene	ND		0.40	0.38	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
trans-1,2-Dichloroethene	ND		0.40	0.098	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
trans-1,3-Dichloropropene	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Trichloroethene	ND		0.40	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Trichlorofluoromethane	ND		0.40	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Vinyl chloride	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Xylenes, Total	1.3		0.79	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 08:08	1
Butyl acrylate	11		7.9	4.3	mg/Kg	✱	03/15/23 13:01	03/17/23 03:09	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		1.6	0.37	mg/Kg	✱	03/15/23 13:01	03/17/23 03:09	2
2-Ethylhexyl acrylate	40		9.9	7.4	mg/Kg	✱	03/15/23 13:01	03/17/23 22:18	2.5

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		56 - 125				03/15/23 13:01	03/17/23 03:09	2
Toluene-d8 (Surr)	92		56 - 125				03/15/23 13:01	03/17/23 08:08	1
Toluene-d8 (Surr)	108		56 - 125				03/15/23 13:01	03/17/23 22:18	2.5
Dibromofluoromethane (Surr)	93		41 - 138				03/15/23 13:01	03/17/23 03:09	2
Dibromofluoromethane (Surr)	80		41 - 138				03/15/23 13:01	03/17/23 08:08	1
Dibromofluoromethane (Surr)	89		41 - 138				03/15/23 13:01	03/17/23 22:18	2.5
4-Bromofluorobenzene (Surr)	115		41 - 143				03/15/23 13:01	03/17/23 03:09	2
4-Bromofluorobenzene (Surr)	100		41 - 143				03/15/23 13:01	03/17/23 08:08	1
4-Bromofluorobenzene (Surr)	111		41 - 143				03/15/23 13:01	03/17/23 22:18	2.5
1,2-Dichloroethane-d4 (Surr)	106		58 - 125				03/15/23 13:01	03/17/23 03:09	2
1,2-Dichloroethane-d4 (Surr)	82		58 - 125				03/15/23 13:01	03/17/23 08:08	1
1,2-Dichloroethane-d4 (Surr)	101		58 - 125				03/15/23 13:01	03/17/23 22:18	2.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.22	J	0.63	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
bis (2-chloroisopropyl) ether	ND		1.3	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4,5-Trichlorophenol	ND		1.9	0.87	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4,6-Trichlorophenol	ND		1.9	0.80	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4-Dichlorophenol	ND		1.9	0.55	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4-Dimethylphenol	ND		1.9	0.50	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4-Dinitrophenol	ND		4.1	1.8	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,4-Dinitrotoluene	ND		2.5	0.78	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2,6-Dinitrotoluene	ND		2.5	0.70	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Chloronaphthalene	ND		0.63	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Chlorophenol	ND		0.63	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Methylnaphthalene	2.1		0.19	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Methylphenol	ND		2.5	0.39	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Nitroaniline	ND		2.5	0.50	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Nitrophenol	ND		0.63	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
3,3'-Dichlorobenzidine	ND		1.3	0.54	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
3-Nitroaniline	ND		2.5	0.61	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4,6-Dinitro-2-methylphenol	ND		4.1	1.0	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Bromophenyl phenyl ether	ND		0.63	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Chloro-3-methylphenol	ND		1.9	0.56	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Chloroaniline	ND		1.9	0.38	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Chlorophenyl phenyl ether	ND		0.63	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Nitroaniline	ND		2.5	0.75	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
4-Nitrophenol	ND		4.1	1.2	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Acenaphthene	0.70		0.19	0.036	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Acenaphthylene	0.55		0.19	0.050	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Acetophenone	ND		1.3	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Anthracene	1.2		0.19	0.030	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Atrazine	ND		2.5	0.45	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Benzaldehyde	ND		1.3	0.29	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Benzo[a]anthracene	2.6		0.19	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	2.8		0.19	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Benzo[b]fluoranthene	5.0		0.19	0.082	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Benzo[g,h,i]perylene	2.3		0.19	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Benzo[k]fluoranthene	1.8		0.19	0.087	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Bis(2-chloroethoxy)methane	ND		1.3	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Bis(2-chloroethyl)ether	ND		1.3	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Bis(2-ethylhexyl) phthalate	ND		0.88	0.64	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Butyl benzyl phthalate	ND		0.88	0.28	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Caprolactam	ND		4.1	0.94	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Carbazole	0.39	J	0.63	0.24	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Chrysene	4.1		0.19	0.019	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Dibenz(a,h)anthracene	0.51		0.19	0.087	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Dibenzofuran	0.93		0.63	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Diethyl phthalate	ND		0.88	0.39	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Dimethyl phthalate	ND		0.88	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Di-n-butyl phthalate	ND		0.88	0.63	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Di-n-octyl phthalate	ND		0.88	0.35	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Fluoranthene	5.1		0.19	0.056	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Fluorene	0.65		0.19	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Hexachlorobenzene	ND		0.19	0.036	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Hexachlorobutadiene	ND		0.63	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Hexachlorocyclopentadiene	ND		4.1	0.78	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Hexachloroethane	ND		0.63	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Indeno[1,2,3-cd]pyrene	2.0		0.19	0.092	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Isophorone	ND		0.63	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
N-Nitrosodi-n-propylamine	ND		0.63	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
N-Nitrosodiphenylamine	ND		0.63	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Naphthalene	1.7		0.19	0.030	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Nitrobenzene	ND		1.3	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Pentachlorophenol	ND		1.9	0.73	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Phenanthrene	3.7		0.19	0.028	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Phenol	ND		0.63	0.10	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
Pyrene	4.6		0.19	0.027	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
3 & 4 Methylphenol	ND		5.0	0.36	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10
2-Butoxyethanol	2.4		0.88	0.82	mg/Kg	✱	03/15/23 09:31	03/17/23 20:02	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	63		46 - 137	03/15/23 09:31	03/17/23 20:02	10
Phenol-d5 (Surr)	56		26 - 120	03/15/23 09:31	03/17/23 20:02	10
Nitrobenzene-d5 (Surr)	61		25 - 120	03/15/23 09:31	03/17/23 20:02	10
2-Fluorophenol (Surr)	57		20 - 120	03/15/23 09:31	03/17/23 20:02	10
2-Fluorobiphenyl (Surr)	56		34 - 120	03/15/23 09:31	03/17/23 20:02	10
2,4,6-Tribromophenol (Surr)	47		10 - 120	03/15/23 09:31	03/17/23 20:02	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0084	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:40	1
Barium	0.43	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:40	1
Cadmium	0.0016	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:40	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:40	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.2

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.017	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:40	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:40	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:40	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.2		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.8		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,1-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,2-Dibromo-3-Chloropropane	ND		0.68	0.30	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,2-Dichloropropane	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
2-Butanone (MEK)	ND		1.4	0.21	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.32	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Acetone	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Benzene	ND		0.34	0.057	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Chloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Chloromethane	ND		0.34	0.090	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
cis-1,2-Dichloroethene	ND		0.34	0.054	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Cyclohexane	0.47	J	0.68	0.22	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Dichlorodifluoromethane	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Ethylbenzene	0.095	J	0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Isopropylbenzene	0.094	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Methyl tert-butyl ether	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Methylcyclohexane	1.6		0.68	0.090	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Methylene Chloride	ND		0.68	0.52	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
trans-1,2-Dichloroethene	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Trichloroethene	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Xylenes, Total	1.0		0.68	0.12	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Butyl acrylate	ND		3.4	1.8	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.68	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
2-Ethylhexyl acrylate	ND		3.4	2.5	mg/Kg	✱	03/15/23 13:01	03/16/23 21:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		56 - 125				03/15/23 13:01	03/16/23 21:16	1
Dibromofluoromethane (Surr)	89		41 - 138				03/15/23 13:01	03/16/23 21:16	1
4-Bromofluorobenzene (Surr)	117		41 - 143				03/15/23 13:01	03/16/23 21:16	1
1,2-Dichloroethane-d4 (Surr)	103		58 - 125				03/15/23 13:01	03/16/23 21:16	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.29	J	0.31	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
bis (2-chloroisopropyl) ether	ND		0.63	0.063	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4,5-Trichlorophenol	ND		0.94	0.43	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4,6-Trichlorophenol	ND		0.94	0.40	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4-Dichlorophenol	ND		0.94	0.28	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4-Dimethylphenol	ND		0.94	0.25	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4-Dinitrophenol	ND		2.1	0.89	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,4-Dinitrotoluene	ND		1.3	0.39	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2,6-Dinitrotoluene	ND		1.3	0.35	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Chloronaphthalene	ND		0.31	0.088	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Chlorophenol	ND		0.31	0.063	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Methylnaphthalene	3.2		0.094	0.012	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Methylphenol	ND		1.3	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Nitroaniline	ND		1.3	0.25	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
2-Nitrophenol	ND		0.31	0.081	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
3,3'-Dichlorobenzidine	ND		0.63	0.27	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
3-Nitroaniline	ND		1.3	0.31	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4,6-Dinitro-2-methylphenol	ND		2.1	0.50	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Bromophenyl phenyl ether	ND		0.31	0.088	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Chloro-3-methylphenol	ND		0.94	0.28	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Chloroaniline	ND		0.94	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Chlorophenyl phenyl ether	ND		0.31	0.088	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Nitroaniline	ND		1.3	0.38	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
4-Nitrophenol	ND		2.1	0.59	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Acenaphthene	0.34		0.094	0.018	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Acenaphthylene	0.51		0.094	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Acetophenone	ND		0.63	0.069	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Anthracene	0.97		0.094	0.015	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Atrazine	ND		1.3	0.23	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzaldehyde	ND		0.63	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzo[a]anthracene	2.3		0.094	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzo[a]pyrene	2.4		0.094	0.058	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzo[b]fluoranthene	4.7		0.094	0.041	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzo[g,h,i]perylene	2.2		0.094	0.044	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Benzo[k]fluoranthene	1.3		0.094	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Bis(2-chloroethoxy)methane	ND		0.63	0.075	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Bis(2-chloroethyl)ether	ND		0.63	0.075	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Bis(2-ethylhexyl) phthalate	ND		0.44	0.32	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5
Butyl benzyl phthalate	ND		0.44	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 15:08	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.1	0.47	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Carbazole	0.26	J	0.31	0.12	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Chrysene	3.9		0.094	0.0093	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Dibenz(a,h)anthracene	0.59		0.094	0.043	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Dibenzofuran	1.1		0.31	0.081	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Diethyl phthalate	ND		0.44	0.19	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Dimethyl phthalate	ND		0.44	0.088	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Di-n-butyl phthalate	ND		0.44	0.32	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Di-n-octyl phthalate	ND		0.44	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Fluoranthene	3.7		0.094	0.028	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Fluorene	0.31		0.094	0.017	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Hexachlorobenzene	ND		0.094	0.018	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Hexachlorobutadiene	ND		0.31	0.075	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Hexachlorocyclopentadiene	ND		2.1	0.39	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Hexachloroethane	ND		0.31	0.056	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Indeno[1,2,3-cd]pyrene	1.8		0.094	0.046	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Isophorone	ND		0.31	0.075	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
N-Nitrosodi-n-propylamine	ND		0.31	0.069	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
N-Nitrosodiphenylamine	ND		0.31	0.075	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Naphthalene	2.6		0.094	0.015	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Nitrobenzene	ND		0.63	0.081	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Pentachlorophenol	ND		0.94	0.36	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Phenanthrene	2.3		0.094	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Phenol	ND		0.31	0.050	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
Pyrene	3.9		0.094	0.013	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
3 & 4 Methylphenol	ND		2.5	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5
2-Butoxyethanol	0.83		0.44	0.41	mg/Kg	✳	03/15/23 09:31	03/17/23 15:08	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	73		46 - 137	03/15/23 09:31	03/17/23 15:08	5
Phenol-d5 (Surr)	63		26 - 120	03/15/23 09:31	03/17/23 15:08	5
Nitrobenzene-d5 (Surr)	58		25 - 120	03/15/23 09:31	03/17/23 15:08	5
2-Fluorophenol (Surr)	58		20 - 120	03/15/23 09:31	03/17/23 15:08	5
2-Fluorobiphenyl (Surr)	70		34 - 120	03/15/23 09:31	03/17/23 15:08	5
2,4,6-Tribromophenol (Surr)	71		10 - 120	03/15/23 09:31	03/17/23 15:08	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:45	1
Barium	0.54	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:45	1
Cadmium	0.0017	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:45	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:45	1
Lead	0.0066	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:45	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:45	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.8		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.2		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 90.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.30	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,1,2,2-Tetrachloroethane	ND		0.30	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.30	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,1,2-Trichloroethane	ND		0.30	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,1-Dichloroethane	ND		0.30	0.057	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,1-Dichloroethene	ND		0.30	0.097	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,2,4-Trichlorobenzene	ND		0.30	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,2-Dibromo-3-Chloropropane	ND		0.59	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Ethylene Dibromide	ND		0.30	0.093	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,2-Dichlorobenzene	ND		0.30	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,2-Dichloroethane	ND		0.30	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,2-Dichloropropane	ND		0.30	0.044	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,3-Dichlorobenzene	ND		0.30	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
1,4-Dichlorobenzene	ND		0.30	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
2-Butanone (MEK)	ND		1.2	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
2-Hexanone	ND		1.2	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Acetone	ND		1.2	0.29	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Benzene	ND		0.30	0.050	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Dichlorobromomethane	ND		0.30	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Bromoform	ND		0.30	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Bromomethane	ND		0.30	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Carbon disulfide	ND		0.30	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Carbon tetrachloride	ND		0.30	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Chlorobenzene	ND		0.30	0.041	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Chloroethane	ND		0.30	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Chloroform	ND		0.30	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Chloromethane	ND		0.30	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
cis-1,2-Dichloroethene	ND		0.30	0.047	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
cis-1,3-Dichloropropene	ND		0.30	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Cyclohexane	ND		0.59	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Chlorodibromomethane	ND		0.30	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Dichlorodifluoromethane	ND		0.30	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Ethylbenzene	0.077	J	0.30	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Isopropylbenzene	ND		0.30	0.045	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Methyl acetate	1.5		1.5	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Methyl tert-butyl ether	ND		0.30	0.044	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Methylcyclohexane	0.31	J	0.59	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Methylene Chloride	ND		0.59	0.45	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Styrene	ND		0.30	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Tetrachloroethene	ND		0.30	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Toluene	ND		0.30	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
trans-1,2-Dichloroethene	ND		0.30	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
trans-1,3-Dichloropropene	ND		0.30	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Trichloroethene	ND		0.30	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Trichlorofluoromethane	ND		0.30	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Vinyl chloride	ND		0.30	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Xylenes, Total	0.52	J	0.59	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:32	1
Butyl acrylate	ND		12	6.4	mg/Kg	✱	03/15/23 13:01	03/17/23 21:48	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 90.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	53		2.4	0.56	mg/Kg	☼	03/15/23 13:01	03/17/23 21:48	4
2-Ethylhexyl acrylate	28		12	8.8	mg/Kg	☼	03/15/23 13:01	03/17/23 21:48	4

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	88		56 - 125				03/15/23 13:01	03/17/23 08:32	1
Toluene-d8 (Surr)	109		56 - 125				03/15/23 13:01	03/17/23 21:48	4
Dibromofluoromethane (Surr)	77		41 - 138				03/15/23 13:01	03/17/23 08:32	1
Dibromofluoromethane (Surr)	95		41 - 138				03/15/23 13:01	03/17/23 21:48	4
4-Bromofluorobenzene (Surr)	97		41 - 143				03/15/23 13:01	03/17/23 08:32	1
4-Bromofluorobenzene (Surr)	114		41 - 143				03/15/23 13:01	03/17/23 21:48	4
1,2-Dichloroethane-d4 (Surr)	77		58 - 125				03/15/23 13:01	03/17/23 08:32	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125				03/15/23 13:01	03/17/23 21:48	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.54	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
bis (2-chloroisopropyl) ether	ND		1.1	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4,5-Trichlorophenol	ND		1.6	0.75	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4,6-Trichlorophenol	ND		1.6	0.70	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4-Dichlorophenol	ND		1.6	0.48	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4-Dimethylphenol	ND		1.6	0.44	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4-Dinitrophenol	ND		3.6	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,4-Dinitrotoluene	ND		2.2	0.68	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2,6-Dinitrotoluene	ND		2.2	0.61	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Chloronaphthalene	ND		0.54	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Chlorophenol	ND		0.54	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Methylnaphthalene	0.39		0.16	0.021	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Methylphenol	ND		2.2	0.34	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Nitroaniline	ND		2.2	0.44	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
2-Nitrophenol	ND		0.54	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
3,3'-Dichlorobenzidine	ND		1.1	0.47	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
3-Nitroaniline	ND		2.2	0.53	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4,6-Dinitro-2-methylphenol	ND		3.6	0.87	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Bromophenyl phenyl ether	ND		0.54	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Chloro-3-methylphenol	ND		1.6	0.49	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Chloroaniline	ND		1.6	0.33	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Chlorophenyl phenyl ether	ND		0.54	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Nitroaniline	ND		2.2	0.65	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
4-Nitrophenol	ND		3.6	1.0	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Acenaphthene	0.067	J	0.16	0.031	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Acenaphthylene	0.058	J	0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Acetophenone	ND		1.1	0.12	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Anthracene	0.10	J	0.16	0.026	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Atrazine	ND		2.2	0.39	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzaldehyde	ND		1.1	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzo[a]anthracene	0.23		0.16	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzo[a]pyrene	0.19		0.16	0.10	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzo[b]fluoranthene	0.47		0.16	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzo[g,h,i]perylene	ND		0.16	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10
Benzo[k]fluoranthene	0.11	J	0.16	0.075	mg/Kg	☼	03/15/23 09:31	03/17/23 20:26	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 90.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		1.1	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Bis(2-chloroethyl)ether	ND		1.1	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Bis(2-ethylhexyl) phthalate	ND		0.76	0.56	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Butyl benzyl phthalate	ND		0.76	0.24	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Caprolactam	ND		3.6	0.82	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Carbazole	ND		0.54	0.21	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Chrysene	0.36		0.16	0.016	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Dibenz(a,h)anthracene	ND		0.16	0.075	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Dibenzofuran	ND		0.54	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Diethyl phthalate	ND		0.76	0.34	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Dimethyl phthalate	ND		0.76	0.15	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Di-n-butyl phthalate	ND		0.76	0.55	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Di-n-octyl phthalate	ND		0.76	0.30	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Fluoranthene	0.51		0.16	0.048	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Fluorene	0.055 J		0.16	0.030	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Hexachlorobenzene	ND		0.16	0.031	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Hexachlorobutadiene	ND		0.54	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Hexachlorocyclopentadiene	ND		3.6	0.68	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Hexachloroethane	ND		0.54	0.098	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Indeno[1,2,3-cd]pyrene	0.13 J		0.16	0.080	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Isophorone	ND		0.54	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
N-Nitrosodi-n-propylamine	ND		0.54	0.12	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
N-Nitrosodiphenylamine	ND		0.54	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Naphthalene	0.29		0.16	0.026	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Nitrobenzene	ND		1.1	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Pentachlorophenol	ND		1.6	0.63	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Phenanthrene	0.37		0.16	0.024	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Phenol	ND		0.54	0.087	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
Pyrene	0.47		0.16	0.023	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
3 & 4 Methylphenol	ND		4.4	0.32	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10
2-Butoxyethanol	3.0		0.76	0.71	mg/Kg	✳	03/15/23 09:31	03/17/23 20:26	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	39	S1-	46 - 137	03/15/23 09:31	03/17/23 20:26	10
Phenol-d5 (Surr)	48		26 - 120	03/15/23 09:31	03/17/23 20:26	10
Nitrobenzene-d5 (Surr)	38		25 - 120	03/15/23 09:31	03/17/23 20:26	10
2-Fluorophenol (Surr)	38		20 - 120	03/15/23 09:31	03/17/23 20:26	10
2-Fluorobiphenyl (Surr)	36		34 - 120	03/15/23 09:31	03/17/23 20:26	10
2,4,6-Tribromophenol (Surr)	28		10 - 120	03/15/23 09:31	03/17/23 20:26	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:49	1
Barium	0.34	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:49	1
Cadmium	0.00027	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:49	1
Chromium	0.19		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:49	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:49	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:49	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 90.5

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	90.5		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	9.5		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.29	0.090	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,1,2,2-Tetrachloroethane	ND		0.29	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.29	0.078	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,1,2-Trichloroethane	ND		0.29	0.066	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,1-Dichloroethane	ND		0.29	0.056	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,1-Dichloroethene	ND		0.29	0.095	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,2,4-Trichlorobenzene	ND		0.29	0.15	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,2-Dibromo-3-Chloropropane	ND		0.58	0.26	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Ethylene Dibromide	ND		0.29	0.091	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,2-Dichlorobenzene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,2-Dichloroethane	ND		0.29	0.054	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,2-Dichloropropane	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,3-Dichlorobenzene	ND		0.29	0.053	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
1,4-Dichlorobenzene	ND		0.29	0.064	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
2-Butanone (MEK)	ND		1.2	0.18	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
2-Hexanone	ND		1.2	0.30	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Acetone	0.29	J	1.2	0.28	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Benzene	ND		0.29	0.049	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Dichlorobromomethane	ND		0.29	0.070	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Bromoform	ND		0.29	0.26	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Bromomethane	ND		0.29	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Carbon disulfide	ND		0.29	0.13	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Carbon tetrachloride	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Chlorobenzene	ND		0.29	0.041	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Chloroethane	ND		0.29	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Chloroform	ND		0.29	0.063	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Chloromethane	ND		0.29	0.076	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
cis-1,2-Dichloroethene	ND		0.29	0.046	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
cis-1,3-Dichloropropene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Cyclohexane	0.29	J	0.58	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Chlorodibromomethane	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Dichlorodifluoromethane	ND		0.29	0.061	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Ethylbenzene	ND		0.29	0.054	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Isopropylbenzene	ND		0.29	0.044	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Methyl acetate	ND		1.4	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Methyl tert-butyl ether	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Methylcyclohexane	1.0		0.58	0.076	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Methylene Chloride	ND		0.58	0.44	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Styrene	ND		0.29	0.060	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Tetrachloroethene	ND		0.29	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Toluene	ND		0.29	0.28	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
trans-1,2-Dichloroethene	ND		0.29	0.072	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
trans-1,3-Dichloropropene	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Trichloroethene	ND		0.29	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Trichlorofluoromethane	ND		0.29	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Vinyl chloride	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Xylenes, Total	0.56	J	0.58	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1
Butyl acrylate	9.0		2.9	1.6	mg/Kg	✱	03/15/23 13:01	03/16/23 22:06	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.58	0.14	mg/Kg	✳	03/15/23 13:01	03/16/23 22:06	1
2-Ethylhexyl acrylate	ND		2.9	2.2	mg/Kg	✳	03/15/23 13:01	03/16/23 22:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	112		56 - 125				03/15/23 13:01	03/16/23 22:06	1
Dibromofluoromethane (Surr)	87		41 - 138				03/15/23 13:01	03/16/23 22:06	1
4-Bromofluorobenzene (Surr)	113		41 - 143				03/15/23 13:01	03/16/23 22:06	1
1,2-Dichloroethane-d4 (Surr)	102		58 - 125				03/15/23 13:01	03/16/23 22:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.13	J	0.25	0.084	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
bis (2-chloroisopropyl) ether	ND		0.49	0.049	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4,5-Trichlorophenol	ND		0.74	0.34	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4,6-Trichlorophenol	ND		0.74	0.32	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4-Dichlorophenol	ND		0.74	0.22	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4-Dimethylphenol	ND		0.74	0.20	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4-Dinitrophenol	ND		1.6	0.70	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,4-Dinitrotoluene	ND		0.99	0.31	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2,6-Dinitrotoluene	ND		0.99	0.28	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Chloronaphthalene	ND		0.25	0.069	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Chlorophenol	ND		0.25	0.049	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Methylnaphthalene	1.2		0.074	0.0097	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Methylphenol	ND		0.99	0.15	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Nitroaniline	ND		0.99	0.20	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Nitrophenol	ND		0.25	0.064	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
3,3'-Dichlorobenzidine	ND		0.49	0.21	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
3-Nitroaniline	ND		0.99	0.24	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4,6-Dinitro-2-methylphenol	ND		1.6	0.40	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Bromophenyl phenyl ether	ND		0.25	0.069	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Chloro-3-methylphenol	ND		0.74	0.22	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Chloroaniline	ND		0.74	0.15	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Chlorophenyl phenyl ether	ND		0.25	0.069	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Nitroaniline	ND		0.99	0.30	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
4-Nitrophenol	ND		1.6	0.47	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Acenaphthene	0.15		0.074	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Acenaphthylene	0.17		0.074	0.020	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Acetophenone	ND		0.49	0.054	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Anthracene	1.4		0.074	0.012	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Atrazine	ND		0.99	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzaldehyde	ND		0.49	0.11	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzo[a]anthracene	1.2		0.074	0.017	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzo[a]pyrene	0.74		0.074	0.046	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzo[b]fluoranthene	1.4		0.074	0.032	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzo[g,h,i]perylene	0.52		0.074	0.035	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Benzo[k]fluoranthene	0.47		0.074	0.034	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Bis(2-chloroethoxy)methane	ND		0.49	0.059	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Bis(2-chloroethyl)ether	ND		0.49	0.059	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Bis(2-ethylhexyl) phthalate	ND		0.35	0.25	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Butyl benzyl phthalate	ND		0.35	0.11	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.6	0.37	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Carbazole	0.18	J	0.25	0.094	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Chrysene	1.8		0.074	0.0074	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Dibenz(a,h)anthracene	0.13		0.074	0.034	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Dibenzofuran	0.53		0.25	0.064	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Diethyl phthalate	ND		0.35	0.15	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Dimethyl phthalate	ND		0.35	0.069	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Di-n-butyl phthalate	ND		0.35	0.25	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Di-n-octyl phthalate	ND		0.35	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Fluoranthene	3.0		0.074	0.022	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Fluorene	0.16		0.074	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Hexachlorobenzene	ND		0.074	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Hexachlorobutadiene	ND		0.25	0.059	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Hexachlorocyclopentadiene	ND		1.6	0.31	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Hexachloroethane	ND		0.25	0.045	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Indeno[1,2,3-cd]pyrene	0.44		0.074	0.036	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Isophorone	ND		0.25	0.059	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
N-Nitrosodi-n-propylamine	ND		0.25	0.054	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
N-Nitrosodiphenylamine	ND		0.25	0.059	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Naphthalene	0.66		0.074	0.012	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Nitrobenzene	ND		0.49	0.064	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Pentachlorophenol	ND		0.74	0.29	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Phenanthrene	1.8		0.074	0.011	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Phenol	ND		0.25	0.040	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
Pyrene	2.5		0.074	0.011	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
3 & 4 Methylphenol	ND		2.0	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4
2-Butoxyethanol	2.9		0.35	0.32	mg/Kg	✳	03/15/23 09:31	03/17/23 16:22	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	63		46 - 137	03/15/23 09:31	03/17/23 16:22	4
Phenol-d5 (Surr)	49		26 - 120	03/15/23 09:31	03/17/23 16:22	4
Nitrobenzene-d5 (Surr)	39		25 - 120	03/15/23 09:31	03/17/23 16:22	4
2-Fluorophenol (Surr)	41		20 - 120	03/15/23 09:31	03/17/23 16:22	4
2-Fluorobiphenyl (Surr)	55		34 - 120	03/15/23 09:31	03/17/23 16:22	4
2,4,6-Tribromophenol (Surr)	50		10 - 120	03/15/23 09:31	03/17/23 16:22	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:54	1
Barium	0.73	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:54	1
Cadmium	0.0016	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:54	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:54	1
Lead	0.012	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:54	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:54	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:54	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.7		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.3		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,1-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,2-Dibromo-3-Chloropropane	ND		0.68	0.30	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,2-Dichloropropane	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
2-Butanone (MEK)	ND		1.4	0.21	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.32	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Acetone	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Benzene	ND		0.34	0.057	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Chloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Chloromethane	ND		0.34	0.090	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
cis-1,2-Dichloroethene	ND		0.34	0.054	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Cyclohexane	ND		0.68	0.22	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Dichlorodifluoromethane	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Ethylbenzene	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Isopropylbenzene	ND		0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Methyl tert-butyl ether	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Methylcyclohexane	0.12	J	0.68	0.090	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Methylene Chloride	ND		0.68	0.52	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
trans-1,2-Dichloroethene	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Trichloroethene	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Xylenes, Total	ND		0.68	0.12	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1
Butyl acrylate	11		3.4	1.8	mg/Kg	✱	03/15/23 13:01	03/16/23 22:31	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	0.17	J	0.68	0.16	mg/Kg	☼	03/15/23 13:01	03/16/23 22:31	1
2-Ethylhexyl acrylate	6.0		3.4	2.5	mg/Kg	☼	03/15/23 13:01	03/16/23 22:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		56 - 125				03/15/23 13:01	03/16/23 22:31	1
Dibromofluoromethane (Surr)	86		41 - 138				03/15/23 13:01	03/16/23 22:31	1
4-Bromofluorobenzene (Surr)	113		41 - 143				03/15/23 13:01	03/16/23 22:31	1
1,2-Dichloroethane-d4 (Surr)	103		58 - 125				03/15/23 13:01	03/16/23 22:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.042	J	0.062	0.021	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
bis (2-chloroisopropyl) ether	ND		0.12	0.012	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4,5-Trichlorophenol	ND		0.19	0.086	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4,6-Trichlorophenol	ND		0.19	0.079	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4-Dichlorophenol	ND		0.19	0.055	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4-Dimethylphenol	ND		0.19	0.050	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4-Dinitrophenol	ND		0.41	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,4-Dinitrotoluene	ND		0.25	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2,6-Dinitrotoluene	ND		0.25	0.070	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Chloronaphthalene	ND		0.062	0.017	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Chlorophenol	ND		0.062	0.012	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Methylnaphthalene	0.61		0.019	0.0024	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Methylphenol	ND		0.25	0.039	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Nitroaniline	ND		0.25	0.050	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Nitrophenol	ND		0.062	0.016	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
3,3'-Dichlorobenzidine	ND		0.12	0.053	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
3-Nitroaniline	ND		0.25	0.061	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4,6-Dinitro-2-methylphenol	ND		0.41	0.099	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Bromophenyl phenyl ether	ND		0.062	0.017	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Chloro-3-methylphenol	ND		0.19	0.056	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Chloroaniline	ND		0.19	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Chlorophenyl phenyl ether	ND		0.062	0.017	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Nitroaniline	ND		0.25	0.075	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
4-Nitrophenol	ND		0.41	0.12	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Acenaphthene	0.060		0.019	0.0036	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Acenaphthylene	0.029		0.019	0.0050	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Acetophenone	ND		0.12	0.014	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Anthracene	0.090		0.019	0.0030	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Atrazine	ND		0.25	0.045	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzaldehyde	ND		0.12	0.029	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzo[a]anthracene	0.13		0.019	0.0042	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzo[a]pyrene	0.099		0.019	0.012	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzo[b]fluoranthene	0.21		0.019	0.0081	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzo[g,h,i]perylene	0.084		0.019	0.0088	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Benzo[k]fluoranthene	0.066		0.019	0.0086	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Bis(2-chloroethoxy)methane	ND		0.12	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Bis(2-chloroethyl)ether	ND		0.12	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Bis(2-ethylhexyl) phthalate	ND		0.087	0.063	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Butyl benzyl phthalate	ND		0.087	0.027	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.41	0.093	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Carbazole	0.038	J	0.062	0.024	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Chrysene	0.20		0.019	0.0019	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Dibenz(a,h)anthracene	ND		0.019	0.0086	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Dibenzofuran	0.15		0.062	0.016	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Diethyl phthalate	ND		0.087	0.039	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Dimethyl phthalate	ND		0.087	0.017	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Di-n-butyl phthalate	ND		0.087	0.063	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Di-n-octyl phthalate	ND		0.087	0.035	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Fluoranthene	0.28		0.019	0.0055	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Fluorene	0.050		0.019	0.0034	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Hexachlorobenzene	ND		0.019	0.0035	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Hexachlorobutadiene	ND		0.062	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Hexachlorocyclopentadiene	ND		0.41	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Hexachloroethane	ND		0.062	0.011	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Indeno[1,2,3-cd]pyrene	0.062		0.019	0.0091	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Isophorone	ND		0.062	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
N-Nitrosodi-n-propylamine	ND		0.062	0.014	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
N-Nitrosodiphenylamine	ND		0.062	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Naphthalene	0.33		0.019	0.0030	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Nitrobenzene	ND		0.12	0.016	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Pentachlorophenol	ND		0.19	0.072	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Phenanthrene	0.48		0.019	0.0028	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Phenol	ND		0.062	0.0099	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
Pyrene	0.26		0.019	0.0027	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
3 & 4 Methylphenol	ND		0.50	0.036	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1
2-Butoxyethanol	0.68		0.087	0.081	mg/Kg	☼	03/15/23 09:31	03/17/23 14:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	66		46 - 137	03/15/23 09:31	03/17/23 14:44	1
Phenol-d5 (Surr)	57		26 - 120	03/15/23 09:31	03/17/23 14:44	1
Nitrobenzene-d5 (Surr)	45		25 - 120	03/15/23 09:31	03/17/23 14:44	1
2-Fluorophenol (Surr)	48		20 - 120	03/15/23 09:31	03/17/23 14:44	1
2-Fluorobiphenyl (Surr)	58		34 - 120	03/15/23 09:31	03/17/23 14:44	1
2,4,6-Tribromophenol (Surr)	57		10 - 120	03/15/23 09:31	03/17/23 14:44	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:58	1
Barium	0.82	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:58	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:58	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:58	1
Lead	0.0084	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:58	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:58	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:58	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.4		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.6		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 79.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.26	0.080	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,1,2,2-Tetrachloroethane	ND		0.26	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.26	0.069	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,1,2-Trichloroethane	0.061	J	0.26	0.059	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,1-Dichloroethane	ND		0.26	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,1-Dichloroethene	ND		0.26	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,2,4-Trichlorobenzene	ND		0.26	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,2-Dibromo-3-Chloropropane	ND		0.51	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Ethylene Dibromide	ND		0.26	0.081	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,2-Dichlorobenzene	ND		0.26	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,2-Dichloroethane	ND		0.26	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,2-Dichloropropane	ND		0.26	0.038	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,3-Dichlorobenzene	ND		0.26	0.047	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
1,4-Dichlorobenzene	ND		0.26	0.057	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
2-Hexanone	ND		1.0	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Acetone	ND		1.0	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Benzene	0.19	J	0.26	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Dichlorobromomethane	ND		0.26	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Bromoform	ND		0.26	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Bromomethane	ND		0.26	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Carbon disulfide	ND		0.26	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Carbon tetrachloride	ND		0.26	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Chlorobenzene	ND		0.26	0.036	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Chloroethane	ND		0.26	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Chloroform	ND		0.26	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Chloromethane	ND		0.26	0.068	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
cis-1,2-Dichloroethene	ND		0.26	0.041	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
cis-1,3-Dichloropropene	ND		0.26	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Cyclohexane	0.18	J	0.51	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Chlorodibromomethane	ND		0.26	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Dichlorodifluoromethane	ND		0.26	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Ethylbenzene	0.053	J	0.26	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Isopropylbenzene	0.055	J	0.26	0.039	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Methyl acetate	ND		1.3	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Methyl tert-butyl ether	ND		0.26	0.038	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Methylcyclohexane	0.67		0.51	0.068	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Methylene Chloride	ND		0.51	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Styrene	ND		0.26	0.053	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Tetrachloroethene	ND		0.26	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Toluene	ND		0.26	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
trans-1,2-Dichloroethene	ND		0.26	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
trans-1,3-Dichloropropene	ND		0.26	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Trichloroethene	ND		0.26	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Trichlorofluoromethane	ND		0.26	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Vinyl chloride	ND		0.26	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Xylenes, Total	0.40	J	0.51	0.094	mg/Kg	✱	03/15/23 13:01	03/17/23 10:55	1
Butyl acrylate	1200		260	140	mg/Kg	✱	03/15/23 13:01	03/18/23 06:32	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 79.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		26	6.1	mg/Kg	✱	03/15/23 13:01	03/16/23 22:56	50
2-Ethylhexyl acrylate	ND		130	96	mg/Kg	✱	03/15/23 13:01	03/16/23 22:56	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		56 - 125				03/15/23 13:01	03/16/23 22:56	50
Toluene-d8 (Surr)	104		56 - 125				03/15/23 13:01	03/17/23 10:55	1
Toluene-d8 (Surr)	87		56 - 125				03/15/23 13:01	03/18/23 06:32	100
Dibromofluoromethane (Surr)	92		41 - 138				03/15/23 13:01	03/16/23 22:56	50
Dibromofluoromethane (Surr)	82		41 - 138				03/15/23 13:01	03/17/23 10:55	1
Dibromofluoromethane (Surr)	83		41 - 138				03/15/23 13:01	03/18/23 06:32	100
4-Bromofluorobenzene (Surr)	112		41 - 143				03/15/23 13:01	03/16/23 22:56	50
4-Bromofluorobenzene (Surr)	81		41 - 143				03/15/23 13:01	03/17/23 10:55	1
4-Bromofluorobenzene (Surr)	84		41 - 143				03/15/23 13:01	03/18/23 06:32	100
1,2-Dichloroethane-d4 (Surr)	101		58 - 125				03/15/23 13:01	03/16/23 22:56	50
1,2-Dichloroethane-d4 (Surr)	80		58 - 125				03/15/23 13:01	03/17/23 10:55	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125				03/15/23 13:01	03/18/23 06:32	100

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.1	1.1	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
bis (2-chloroisopropyl) ether	ND		6.3	0.63	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4,5-Trichlorophenol	ND		9.4	4.3	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4,6-Trichlorophenol	ND		9.4	4.0	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4-Dichlorophenol	ND		9.4	2.8	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4-Dimethylphenol	ND		9.4	2.5	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4-Dinitrophenol	ND		21	8.9	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,4-Dinitrotoluene	ND		13	3.9	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2,6-Dinitrotoluene	ND		13	3.5	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Chloronaphthalene	ND		3.1	0.88	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Chlorophenol	ND		3.1	0.63	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Methylnaphthalene	0.69	J	0.94	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Methylphenol	ND		13	2.0	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Nitroaniline	ND		13	2.5	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Nitrophenol	ND		3.1	0.82	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
3,3'-Dichlorobenzidine	ND		6.3	2.7	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
3-Nitroaniline	ND		13	3.1	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4,6-Dinitro-2-methylphenol	ND		21	5.0	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Bromophenyl phenyl ether	ND		3.1	0.88	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Chloro-3-methylphenol	ND		9.4	2.8	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Chloroaniline	ND		9.4	1.9	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Chlorophenyl phenyl ether	ND		3.1	0.88	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Nitroaniline	ND		13	3.8	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
4-Nitrophenol	ND		21	5.9	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Acenaphthene	ND		0.94	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Acenaphthylene	ND		0.94	0.25	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Acetophenone	ND		6.3	0.69	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Anthracene	0.23	J	0.94	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Atrazine	ND		13	2.3	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Benzaldehyde	ND		6.3	1.4	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Benzo[a]anthracene	0.67	J	0.94	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 79.2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.94	0.59	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Benzo[b]fluoranthene	0.82	J	0.94	0.41	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Benzo[g,h,i]perylene	ND		0.94	0.45	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Benzo[k]fluoranthene	ND		0.94	0.44	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Bis(2-chloroethoxy)methane	ND		6.3	0.76	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Bis(2-chloroethyl)ether	ND		6.3	0.76	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Bis(2-ethylhexyl) phthalate	ND		4.4	3.2	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Butyl benzyl phthalate	ND		4.4	1.4	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Caprolactam	ND		21	4.7	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Carbazole	ND		3.1	1.2	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Chrysene	0.96		0.94	0.094	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Dibenz(a,h)anthracene	ND		0.94	0.44	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Dibenzofuran	ND		3.1	0.82	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Diethyl phthalate	ND		4.4	2.0	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Dimethyl phthalate	ND		4.4	0.88	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Di-n-butyl phthalate	ND		4.4	3.2	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Di-n-octyl phthalate	ND		4.4	1.8	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Fluoranthene	1.3		0.94	0.28	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Fluorene	ND		0.94	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Hexachlorobenzene	ND		0.94	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Hexachlorobutadiene	ND		3.1	0.76	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Hexachlorocyclopentadiene	ND		21	3.9	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Hexachloroethane	ND		3.1	0.57	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Indeno[1,2,3-cd]pyrene	ND		0.94	0.46	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Isophorone	ND		3.1	0.76	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
N-Nitrosodi-n-propylamine	ND		3.1	0.69	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
N-Nitrosodiphenylamine	ND		3.1	0.76	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Naphthalene	ND		0.94	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Nitrobenzene	ND		6.3	0.82	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Pentachlorophenol	ND		9.4	3.7	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Phenanthrene	0.90	J	0.94	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Phenol	ND		3.1	0.50	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
Pyrene	1.2		0.94	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
3 & 4 Methylphenol	ND		25	1.8	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50
2-Butoxyethanol	67		4.4	4.1	mg/Kg	✱	03/15/23 09:31	03/17/23 17:35	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	48		46 - 137	03/15/23 09:31	03/17/23 17:35	50
Phenol-d5 (Surr)	39		26 - 120	03/15/23 09:31	03/17/23 17:35	50
Nitrobenzene-d5 (Surr)	37		25 - 120	03/15/23 09:31	03/17/23 17:35	50
2-Fluorophenol (Surr)	43		20 - 120	03/15/23 09:31	03/17/23 17:35	50
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 17:35	50
2,4,6-Tribromophenol (Surr)	21		10 - 120	03/15/23 09:31	03/17/23 17:35	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.014	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:03	1
Barium	0.52	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:03	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:03	1
Chromium	0.028	J	0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:03	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 79.2

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.049	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:03	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:03	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:03	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.2		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	20.8		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 82.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/17/23 15:32	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/17/23 15:32	1
2-Butanone (MEK)	0.023	J B	0.25	0.0012	mg/L			03/17/23 15:32	1
Benzene	ND		0.025	0.00042	mg/L			03/17/23 15:32	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/17/23 15:32	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/17/23 15:32	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:32	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:32	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/17/23 15:32	1
Chloroform	ND		0.025	0.00047	mg/L			03/17/23 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 120		03/17/23 15:32	1
Dibromofluoromethane (Surr)	94		71 - 121		03/17/23 15:32	1
4-Bromofluorobenzene (Surr)	89		80 - 120		03/17/23 15:32	1
1,2-Dichloroethane-d4 (Surr)	97		76 - 120		03/17/23 15:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/16/23 11:22	03/18/23 15:39	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/16/23 11:22	03/18/23 15:39	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/16/23 11:22	03/18/23 15:39	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/16/23 11:22	03/18/23 15:39	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/16/23 11:22	03/18/23 15:39	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/16/23 11:22	03/18/23 15:39	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/16/23 11:22	03/18/23 15:39	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/16/23 11:22	03/18/23 15:39	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/16/23 11:22	03/18/23 15:39	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/16/23 11:22	03/18/23 15:39	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/16/23 11:22	03/18/23 15:39	1
Pyridine	ND		0.0040	0.00036	mg/L		03/16/23 11:22	03/18/23 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	123		46 - 137	03/16/23 11:22	03/18/23 15:39	1
Phenol-d5 (Surr)	64		26 - 120	03/16/23 11:22	03/18/23 15:39	1
Nitrobenzene-d5 (Surr)	72		24 - 120	03/16/23 11:22	03/18/23 15:39	1
2-Fluorophenol (Surr)	71		19 - 120	03/16/23 11:22	03/18/23 15:39	1
2-Fluorobiphenyl (Surr)	96		33 - 120	03/16/23 11:22	03/18/23 15:39	1
2,4,6-Tribromophenol (Surr)	94		10 - 120	03/16/23 11:22	03/18/23 15:39	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/16/23 11:26	03/17/23 11:42	1
Endrin	ND		0.00050	0.0000065	mg/L		03/16/23 11:26	03/17/23 11:42	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/16/23 11:26	03/17/23 11:42	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/16/23 11:26	03/17/23 11:42	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/16/23 11:26	03/17/23 11:42	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/16/23 11:26	03/17/23 11:42	1
Toxaphene	ND		0.020	0.000058	mg/L		03/16/23 11:26	03/17/23 11:42	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 82.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	03/16/23 11:26	03/17/23 11:42	1
DCB Decachlorobiphenyl	72		10 - 145	03/16/23 11:26	03/17/23 11:42	1
Tetrachloro-m-xylene	60		10 - 123	03/16/23 11:26	03/17/23 11:42	1
Tetrachloro-m-xylene	59		10 - 123	03/16/23 11:26	03/17/23 11:42	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		60	30	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1221	ND		60	36	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1232	ND		60	25	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1242	ND		60	23	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1248	ND		60	21	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1254	ND		60	25	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1260	ND		60	25	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1262	ND		60	27	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1
Aroclor-1268	ND		60	19	ug/Kg	☆	03/16/23 08:44	03/16/23 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		10 - 149	03/16/23 08:44	03/16/23 18:40	1
DCB Decachlorobiphenyl	63		10 - 174	03/16/23 08:44	03/16/23 18:40	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 06:22	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 06:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136	03/20/23 19:00	03/21/23 06:22	1
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/20/23 19:00	03/21/23 06:22	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	140	B	6.0	0.17	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,4,6,7,8-HpCDF	25	B	6.0	0.078	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,4,7,8-HxCDD	6.0	B	6.0	0.050	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,4,7,8-HxCDF	7.1		6.0	0.094	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,4,7,8,9-HpCDF	5.3	J B	6.0	0.10	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,6,7,8-HxCDD	7.4	B	6.0	0.045	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,6,7,8-HxCDF	5.5	J B	6.0	0.087	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,7,8-PeCDD	4.1	J I B	6.0	0.052	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,7,8-PeCDF	3.9	J I B	6.0	0.077	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,7,8,9-HxCDD	5.4	J B	6.0	0.044	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
1,2,3,7,8,9-HxCDF	5.1	J B	6.0	0.11	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
2,3,4,6,7,8-HxCDF	5.8	J B	6.0	0.088	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
2,3,4,7,8-PeCDF	6.6	B	6.0	0.060	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
2,3,7,8-TCDD	1.9		1.2	0.058	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
2,3,7,8-TCDF	1.9	B	1.2	0.20	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
OCDD	1100	B	12	0.22	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
OCDF	81	B	12	0.089	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
Total HxCDD	72	I B	6.0	0.046	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1
Total HxCDF	57	I B	6.0	0.094	ng/Kg	☆	03/17/23 11:07	03/21/23 07:02	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 82.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	140	B	6.0	0.17	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1
Total HpCDF	75	B	6.0	0.091	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1
Total PeCDD	14	IB	6.0	0.052	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1
Total PeCDF	47	IB	6.0	0.068	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1
Total TCDD	7.3	IB	1.2	0.058	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1
Total TCDF	13	IB	1.2	0.20	ng/Kg	☼	03/17/23 11:07	03/21/23 07:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	90		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-OCDD	95		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-2,3,7,8-TCDF	84		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-2,3,7,8-TCDD	84		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-2,3,4,7,8-PeCDF	93		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-2,3,4,6,7,8-HxCDF	78		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,7,8,9-HxCDF	77		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,7,8,9-HxCDD	88		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,7,8-PeCDF	91		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,7,8-PeCDD	87		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,6,7,8-HxCDF	84		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,6,7,8-HxCDD	86		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,4,7,8,9-HpCDF	83		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,4,7,8-HxCDF	79		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,4,7,8-HxCDD	79		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,4,6,7,8-HpCDF	79		40 - 135	03/17/23 11:07	03/21/23 07:02	1
13C-1,2,3,4,6,7,8-HpCDD	85		40 - 135	03/17/23 11:07	03/21/23 07:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.6		0.1	0.1	%			03/15/23 14:34	1
Percent Moisture (EPA Moisture)	17.4		0.1	0.1	%			03/15/23 14:34	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2,2-Tetrachloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2-Trichloroethane	ND		0.40	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1-Dichloroethane	ND		0.40	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1-Dichloroethene	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2,4-Trichlorobenzene	ND		0.40	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dibromo-3-Chloropropane	ND		0.80	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Ethylene Dibromide	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichlorobenzene	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloroethane	ND		0.40	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloropropane	ND		0.40	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,3-Dichlorobenzene	ND		0.40	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,4-Dichlorobenzene	ND		0.40	0.089	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
2-Butanone (MEK)	ND		1.6	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
2-Hexanone	ND		1.6	0.42	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
4-Methyl-2-pentanone (MIBK)	ND		1.6	0.38	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Acetone	ND		1.6	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Benzene	ND		0.40	0.068	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Dichlorobromomethane	ND		0.40	0.098	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Bromoform	ND		0.40	0.37	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Bromomethane	ND		0.40	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Carbon disulfide	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Carbon tetrachloride	ND		0.40	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chlorobenzene	ND		0.40	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloroform	ND		0.40	0.087	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloromethane	ND		0.40	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
cis-1,2-Dichloroethene	ND		0.40	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
cis-1,3-Dichloropropene	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Cyclohexane	ND		0.80	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chlorodibromomethane	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Dichlorodifluoromethane	ND		0.40	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Ethylbenzene	0.084	J	0.40	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Isopropylbenzene	0.098	J	0.40	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methyl acetate	0.38	J	2.0	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methyl tert-butyl ether	ND		0.40	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methylcyclohexane	0.91		0.80	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methylene Chloride	ND		0.80	0.62	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Styrene	ND		0.40	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Tetrachloroethene	ND		0.40	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Toluene	ND		0.40	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
trans-1,2-Dichloroethene	ND		0.40	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
trans-1,3-Dichloropropene	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Trichloroethene	ND		0.40	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Trichlorofluoromethane	ND		0.40	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Vinyl chloride	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Xylenes, Total	0.80		0.80	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Butyl acrylate	25		21	11	mg/Kg	✱	03/15/23 13:01	03/17/23 20:32	5.26315 789

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		4.2	1.0	mg/Kg	☼	03/15/23 13:01	03/17/23 20:32	5.26315 789
2-Ethylhexyl acrylate	98		21	16	mg/Kg	☼	03/15/23 13:01	03/17/23 20:32	5.26315 789
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		56 - 125				03/15/23 13:01	03/17/23 08:55	1
Toluene-d8 (Surr)	108		56 - 125				03/15/23 13:01	03/17/23 20:32	5.26315 789
Dibromofluoromethane (Surr)	80		41 - 138				03/15/23 13:01	03/17/23 08:55	1
Dibromofluoromethane (Surr)	94		41 - 138				03/15/23 13:01	03/17/23 20:32	5.26315 789
4-Bromofluorobenzene (Surr)	104		41 - 143				03/15/23 13:01	03/17/23 08:55	1
4-Bromofluorobenzene (Surr)	113		41 - 143				03/15/23 13:01	03/17/23 20:32	5.26315 789
1,2-Dichloroethane-d4 (Surr)	79		58 - 125				03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125				03/15/23 13:01	03/17/23 20:32	5.26315 789

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.072	J	0.16	0.054	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
bis (2-chloroisopropyl) ether	ND		0.32	0.032	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4,5-Trichlorophenol	ND		0.48	0.22	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4,6-Trichlorophenol	ND		0.48	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dichlorophenol	ND		0.48	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dimethylphenol	ND		0.48	0.13	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dinitrophenol	ND		1.0	0.45	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dinitrotoluene	ND		0.63	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,6-Dinitrotoluene	ND		0.63	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Chloronaphthalene	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Chlorophenol	ND		0.16	0.032	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Methylnaphthalene	0.68		0.048	0.0062	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Methylphenol	ND		0.63	0.098	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Nitroaniline	ND		0.63	0.13	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Nitrophenol	ND		0.16	0.041	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
3,3'-Dichlorobenzidine	ND		0.32	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
3-Nitroaniline	ND		0.63	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Bromophenyl phenyl ether	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chloro-3-methylphenol	ND		0.48	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chloroaniline	ND		0.48	0.095	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chlorophenyl phenyl ether	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Nitroaniline	ND		0.63	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Nitrophenol	ND		1.0	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acenaphthene	0.16		0.048	0.0091	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acenaphthylene	0.18		0.048	0.013	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acetophenone	ND		0.32	0.035	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Anthracene	0.39		0.048	0.0076	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Atrazine	ND		0.63	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Benzaldehyde	ND		0.32	0.073	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.98		0.048	0.011	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[a]pyrene	0.67		0.048	0.030	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[b]fluoranthene	1.5		0.048	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[g,h,i]perylene	0.43		0.048	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[k]fluoranthene	0.45		0.048	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-chloroethoxy)methane	ND		0.32	0.038	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-chloroethyl)ether	ND		0.32	0.038	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Butyl benzyl phthalate	ND		0.22	0.070	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Caprolactam	ND		1.0	0.24	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Carbazole	0.15	J	0.16	0.060	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Chrysene	1.3		0.048	0.0047	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Dibenz(a,h)anthracene	0.13		0.048	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Dibenzofuran	0.31		0.16	0.041	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Diethyl phthalate	ND		0.22	0.098	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Dimethyl phthalate	ND		0.22	0.044	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Di-n-octyl phthalate	ND		0.22	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Fluoranthene	1.7		0.048	0.014	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Fluorene	0.17		0.048	0.0087	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorobenzene	ND		0.048	0.0090	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorobutadiene	ND		0.16	0.038	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorocyclopentadiene	ND		1.0	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Hexachloroethane	ND		0.16	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Indeno[1,2,3-cd]pyrene	0.42		0.048	0.023	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Isophorone	ND		0.16	0.038	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
N-Nitrosodi-n-propylamine	ND		0.16	0.035	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
N-Nitrosodiphenylamine	ND		0.16	0.038	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Naphthalene	0.41		0.048	0.0076	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Nitrobenzene	ND		0.32	0.041	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Pentachlorophenol	ND		0.48	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Phenanthrene	1.1		0.048	0.0071	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Phenol	ND		0.16	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
Pyrene	1.7		0.048	0.0068	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
3 & 4 Methylphenol	ND		1.3	0.092	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5
2-Butoxyethanol	2.4		0.22	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 18:24	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	52		46 - 137	03/15/23 09:31	03/17/23 18:24	2.5
Phenol-d5 (Surr)	40		26 - 120	03/15/23 09:31	03/17/23 18:24	2.5
Nitrobenzene-d5 (Surr)	32		25 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2-Fluorophenol (Surr)	35		20 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2-Fluorobiphenyl (Surr)	42		34 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2,4,6-Tribromophenol (Surr)	32		10 - 120	03/15/23 09:31	03/17/23 18:24	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:08	1
Barium	0.60	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:08	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:08	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:08	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:08	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:08	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.8		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.2		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2-Trichloroethane	ND		0.34	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1-Dichloroethane	ND		0.34	0.066	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dibromo-3-Chloropropane	ND		0.69	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichlorobenzene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloropropane	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,4-Dichlorobenzene	ND		0.34	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
2-Butanone (MEK)	ND		1.4	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Acetone	ND		1.4	0.34	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Benzene	ND		0.34	0.058	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Dichlorobromomethane	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloromethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
cis-1,2-Dichloroethene	ND		0.34	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Cyclohexane	ND		0.69	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Dichlorodifluoromethane	ND		0.34	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Ethylbenzene	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Isopropylbenzene	0.055	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methyl tert-butyl ether	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methylcyclohexane	0.69		0.69	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methylene Chloride	ND		0.69	0.53	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Styrene	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
trans-1,2-Dichloroethene	ND		0.34	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Trichloroethene	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Xylenes, Total	0.42	J	0.69	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Butyl acrylate	41		17	9.3	mg/Kg	✱	03/15/23 13:01	03/16/23 23:47	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		3.4	0.81	mg/Kg	✱	03/15/23 13:01	03/16/23 23:47	5
2-Ethylhexyl acrylate	99		34	26	mg/Kg	✱	03/15/23 13:01	03/17/23 20:57	10

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		56 - 125				03/15/23 13:01	03/16/23 23:47	5
Toluene-d8 (Surr)	90		56 - 125				03/15/23 13:01	03/17/23 07:44	1
Toluene-d8 (Surr)	109		56 - 125				03/15/23 13:01	03/17/23 20:57	10
Dibromofluoromethane (Surr)	89		41 - 138				03/15/23 13:01	03/16/23 23:47	5
Dibromofluoromethane (Surr)	81		41 - 138				03/15/23 13:01	03/17/23 07:44	1
Dibromofluoromethane (Surr)	94		41 - 138				03/15/23 13:01	03/17/23 20:57	10
4-Bromofluorobenzene (Surr)	111		41 - 143				03/15/23 13:01	03/16/23 23:47	5
4-Bromofluorobenzene (Surr)	102		41 - 143				03/15/23 13:01	03/17/23 07:44	1
4-Bromofluorobenzene (Surr)	114		41 - 143				03/15/23 13:01	03/17/23 20:57	10
1,2-Dichloroethane-d4 (Surr)	101		58 - 125				03/15/23 13:01	03/16/23 23:47	5
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125				03/15/23 13:01	03/17/23 20:57	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.074	J	0.15	0.052	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
bis (2-chloroisopropyl) ether	ND		0.31	0.031	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4,5-Trichlorophenol	ND		0.46	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4,6-Trichlorophenol	ND		0.46	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dichlorophenol	ND		0.46	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dimethylphenol	ND		0.46	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dinitrophenol	ND		1.0	0.44	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dinitrotoluene	ND		0.61	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2,6-Dinitrotoluene	ND		0.61	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Chloronaphthalene	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Chlorophenol	ND		0.15	0.031	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Methylnaphthalene	0.55		0.046	0.0060	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Methylphenol	ND		0.61	0.095	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Nitroaniline	ND		0.61	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Nitrophenol	ND		0.15	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
3,3'-Dichlorobenzidine	ND		0.31	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
3-Nitroaniline	ND		0.61	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Bromophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Chloro-3-methylphenol	ND		0.46	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Chloroaniline	ND		0.46	0.092	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Chlorophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Nitroaniline	ND		0.61	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
4-Nitrophenol	ND		1.0	0.29	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Acenaphthene	0.11		0.046	0.0088	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Acenaphthylene	0.10		0.046	0.012	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Acetophenone	ND		0.31	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Anthracene	0.28		0.046	0.0074	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Atrazine	ND		0.61	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzaldehyde	ND		0.31	0.071	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[a]anthracene	0.83		0.046	0.010	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	0.55		0.046	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[b]fluoranthene	1.0		0.046	0.020	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[g,h,i]perylene	0.31		0.046	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[k]fluoranthene	0.41		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-chloroethoxy)methane	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-chloroethyl)ether	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Butyl benzyl phthalate	ND		0.22	0.068	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Caprolactam	ND		1.0	0.23	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Carbazole	0.15		0.15	0.058	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Chrysene	1.1		0.046	0.0046	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dibenz(a,h)anthracene	0.092		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dibenzofuran	0.30		0.15	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Diethyl phthalate	ND		0.22	0.095	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dimethyl phthalate	ND		0.22	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Di-n-octyl phthalate	ND		0.22	0.086	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Fluoranthene	1.7		0.046	0.014	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Fluorene	0.17		0.046	0.0084	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorobenzene	ND		0.046	0.0088	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorobutadiene	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorocyclopentadiene	ND		1.0	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachloroethane	ND		0.15	0.028	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Indeno[1,2,3-cd]pyrene	0.27		0.046	0.023	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Isophorone	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
N-Nitrosodi-n-propylamine	ND		0.15	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
N-Nitrosodiphenylamine	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Naphthalene	0.35		0.046	0.0074	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Nitrobenzene	ND		0.31	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Pentachlorophenol	ND		0.46	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Phenanthrene	1.0		0.046	0.0069	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Phenol	ND		0.15	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Pyrene	1.6		0.046	0.0066	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
3 & 4 Methylphenol	ND		1.2	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Butoxyethanol	2.5		0.22	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	53		46 - 137	03/15/23 09:31	03/17/23 18:49	2.5
Phenol-d5 (Surr)	47		26 - 120	03/15/23 09:31	03/17/23 18:49	2.5
Nitrobenzene-d5 (Surr)	33		25 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2-Fluorophenol (Surr)	42		20 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2-Fluorobiphenyl (Surr)	47		34 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/15/23 09:31	03/17/23 18:49	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:12	1
Barium	0.50	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:12	1
Cadmium	0.0011	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:12	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:12	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:12	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.0		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.0		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dibromo-3-Chloropropane	ND		0.68	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichloropropane	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
2-Butanone (MEK)	ND		1.4	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.32	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Acetone	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Benzene	ND		0.34	0.057	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloromethane	ND		0.34	0.090	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
cis-1,2-Dichloroethene	ND		0.34	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Cyclohexane	0.26	J	0.68	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Dichlorodifluoromethane	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Ethylbenzene	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Isopropylbenzene	0.058	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methyl tert-butyl ether	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methylcyclohexane	0.99		0.68	0.090	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methylene Chloride	ND		0.68	0.52	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
trans-1,2-Dichloroethene	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Trichloroethene	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Xylenes, Total	0.52	J	0.68	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Butyl acrylate	3.3	J	3.4	1.8	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.68	0.16	mg/Kg	☼	03/15/23 13:01	03/17/23 00:12	1
2-Ethylhexyl acrylate	11		3.4	2.5	mg/Kg	☼	03/15/23 13:01	03/17/23 00:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	110		56 - 125				03/15/23 13:01	03/17/23 00:12	1
<i>Dibromofluoromethane (Surr)</i>	88		41 - 138				03/15/23 13:01	03/17/23 00:12	1
<i>4-Bromofluorobenzene (Surr)</i>	113		41 - 143				03/15/23 13:01	03/17/23 00:12	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		58 - 125				03/15/23 13:01	03/17/23 00:12	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.2	2.1	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
bis (2-chloroisopropyl) ether	ND		12	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4,5-Trichlorophenol	ND		18	8.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4,6-Trichlorophenol	ND		18	7.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dichlorophenol	ND		18	5.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dimethylphenol	ND		18	4.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dinitrophenol	ND		41	17	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dinitrotoluene	ND		25	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,6-Dinitrotoluene	ND		25	6.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Chloronaphthalene	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Chlorophenol	ND		6.2	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Methylnaphthalene	1.0	J	1.8	0.24	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Methylphenol	ND		25	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Nitroaniline	ND		25	4.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Nitrophenol	ND		6.2	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
3,3'-Dichlorobenzidine	ND		12	5.3	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
3-Nitroaniline	ND		25	6.0	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4,6-Dinitro-2-methylphenol	ND		41	9.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Bromophenyl phenyl ether	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chloro-3-methylphenol	ND		18	5.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chloroaniline	ND		18	3.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chlorophenyl phenyl ether	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Nitroaniline	ND		25	7.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Nitrophenol	ND		41	12	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acenaphthene	ND		1.8	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acenaphthylene	ND		1.8	0.49	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acetophenone	ND		12	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Anthracene	ND		1.8	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Atrazine	ND		25	4.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzaldehyde	ND		12	2.8	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[a]anthracene	ND		1.8	0.42	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[a]pyrene	ND		1.8	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[b]fluoranthene	ND		1.8	0.80	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[g,h,i]perylene	ND		1.8	0.87	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[k]fluoranthene	ND		1.8	0.85	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-chloroethoxy)methane	ND		12	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-chloroethyl)ether	ND		12	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-ethylhexyl) phthalate	ND		8.6	6.3	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Butyl benzyl phthalate	ND		8.6	2.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		41	9.2	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Carbazole	ND		6.2	2.3	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Chrysene	ND		1.8	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Dibenz(a,h)anthracene	ND		1.8	0.85	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Dibenzofuran	ND		6.2	1.6	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Diethyl phthalate	ND		8.6	3.8	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Dimethyl phthalate	ND		8.6	1.7	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Di-n-butyl phthalate	ND		8.6	6.2	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Di-n-octyl phthalate	ND		8.6	3.4	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Fluoranthene	1.1	J	1.8	0.55	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Fluorene	ND		1.8	0.34	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Hexachlorobenzene	ND		1.8	0.35	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Hexachlorobutadiene	ND		6.2	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Hexachlorocyclopentadiene	ND		41	7.6	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Hexachloroethane	ND		6.2	1.1	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Indeno[1,2,3-cd]pyrene	ND		1.8	0.91	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Isophorone	ND		6.2	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
N-Nitrosodi-n-propylamine	ND		6.2	1.4	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
N-Nitrosodiphenylamine	ND		6.2	1.5	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Naphthalene	ND		1.8	0.30	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Nitrobenzene	ND		12	1.6	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Pentachlorophenol	ND		18	7.1	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Phenanthrene	0.91	J	1.8	0.27	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Phenol	ND		6.2	0.99	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
Pyrene	1.0	J	1.8	0.26	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
3 & 4 Methylphenol	ND		49	3.6	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100
2-Butoxyethanol	130		8.6	8.1	mg/Kg	✳	03/15/23 09:31	03/17/23 16:46	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	49		46 - 137	03/15/23 09:31	03/17/23 16:46	100
Phenol-d5 (Surr)	40		26 - 120	03/15/23 09:31	03/17/23 16:46	100
Nitrobenzene-d5 (Surr)	24	S1-	25 - 120	03/15/23 09:31	03/17/23 16:46	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	03/15/23 09:31	03/17/23 16:46	100
2-Fluorobiphenyl (Surr)	36		34 - 120	03/15/23 09:31	03/17/23 16:46	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/15/23 09:31	03/17/23 16:46	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:17	1
Barium	0.36	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:17	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:17	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:17	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:17	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:17	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:17	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:03	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.7		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.3		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.37	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,1,2,2-Tetrachloroethane	ND		0.37	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.37	0.098	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,1,2-Trichloroethane	ND		0.37	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,1-Dichloroethane	ND		0.37	0.070	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,1-Dichloroethene	ND		0.37	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,2,4-Trichlorobenzene	ND		0.37	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,2-Dibromo-3-Chloropropane	ND		0.73	0.32	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Ethylene Dibromide	ND		0.37	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichlorobenzene	ND		0.37	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloroethane	ND		0.37	0.069	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloropropane	ND		0.37	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,3-Dichlorobenzene	ND		0.37	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
1,4-Dichlorobenzene	ND		0.37	0.081	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
2-Hexanone	ND		1.5	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.35	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Acetone	ND		1.5	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Benzene	ND		0.37	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Dichlorobromomethane	ND		0.37	0.089	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Bromoform	ND		0.37	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Bromomethane	ND		0.37	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Carbon disulfide	ND		0.37	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Carbon tetrachloride	ND		0.37	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Chlorobenzene	ND		0.37	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Chloroethane	ND		0.37	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Chloroform	ND		0.37	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Chloromethane	ND		0.37	0.097	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
cis-1,2-Dichloroethene	ND		0.37	0.059	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
cis-1,3-Dichloropropene	ND		0.37	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Cyclohexane	ND		0.73	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Chlorodibromomethane	ND		0.37	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Dichlorodifluoromethane	ND		0.37	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Ethylbenzene	ND		0.37	0.069	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Isopropylbenzene	ND		0.37	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Methyl acetate	ND		1.8	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Methyl tert-butyl ether	ND		0.37	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Methylcyclohexane	0.62	J	0.73	0.097	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Methylene Chloride	ND		0.73	0.56	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Styrene	ND		0.37	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Tetrachloroethene	ND		0.37	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Toluene	ND		0.37	0.35	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
trans-1,2-Dichloroethene	ND		0.37	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
trans-1,3-Dichloropropene	ND		0.37	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Trichloroethene	ND		0.37	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Trichlorofluoromethane	ND		0.37	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Vinyl chloride	0.24	J	0.37	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Xylenes, Total	0.41	J	0.73	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 09:19	1
Butyl acrylate	40		31	17	mg/Kg	✱	03/15/23 13:01	03/17/23 20:07	8.3333

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		6.1	1.4	mg/Kg	☼	03/15/23 13:01	03/17/23 20:07	8.3333
2-Ethylhexyl acrylate	130		31	23	mg/Kg	☼	03/15/23 13:01	03/17/23 20:07	8.3333

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		56 - 125	03/15/23 13:01	03/17/23 09:19	1
Toluene-d8 (Surr)	109		56 - 125	03/15/23 13:01	03/17/23 20:07	8.3333
Dibromofluoromethane (Surr)	79		41 - 138	03/15/23 13:01	03/17/23 09:19	1
Dibromofluoromethane (Surr)	94		41 - 138	03/15/23 13:01	03/17/23 20:07	8.3333
4-Bromofluorobenzene (Surr)	97		41 - 143	03/15/23 13:01	03/17/23 09:19	1
4-Bromofluorobenzene (Surr)	114		41 - 143	03/15/23 13:01	03/17/23 20:07	8.3333
1,2-Dichloroethane-d4 (Surr)	80		58 - 125	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloroethane-d4 (Surr)	103		58 - 125	03/15/23 13:01	03/17/23 20:07	8.3333

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.32	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
bis (2-chloroisopropyl) ether	ND		0.64	0.064	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4,5-Trichlorophenol	ND		0.96	0.44	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4,6-Trichlorophenol	ND		0.96	0.41	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dichlorophenol	ND		0.96	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dimethylphenol	ND		0.96	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dinitrophenol	ND		2.1	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dinitrotoluene	ND		1.3	0.40	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,6-Dinitrotoluene	ND		1.3	0.36	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Chloronaphthalene	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Chlorophenol	ND		0.32	0.064	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Methylnaphthalene	0.76		0.096	0.013	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Methylphenol	ND		1.3	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Nitroaniline	ND		1.3	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Nitrophenol	ND		0.32	0.084	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
3,3'-Dichlorobenzidine	ND		0.64	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
3-Nitroaniline	ND		1.3	0.31	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4,6-Dinitro-2-methylphenol	ND		2.1	0.51	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Bromophenyl phenyl ether	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chloro-3-methylphenol	ND		0.96	0.29	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chloroaniline	ND		0.96	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chlorophenyl phenyl ether	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Nitroaniline	ND		1.3	0.39	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Nitrophenol	ND		2.1	0.60	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acenaphthene	0.074	J	0.096	0.018	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acenaphthylene	0.12		0.096	0.026	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acetophenone	ND		0.64	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Anthracene	0.17		0.096	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Atrazine	ND		1.3	0.23	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzaldehyde	ND		0.64	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[a]anthracene	0.40		0.096	0.022	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[a]pyrene	0.35		0.096	0.060	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[b]fluoranthene	0.82		0.096	0.042	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[g,h,i]perylene	0.26		0.096	0.046	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[k]fluoranthene	0.21		0.096	0.045	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.64	0.077	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Bis(2-chloroethyl)ether	ND		0.64	0.077	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Bis(2-ethylhexyl) phthalate	ND		0.45	0.33	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Butyl benzyl phthalate	ND		0.45	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Caprolactam	ND		2.1	0.48	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Carbazole	ND		0.32	0.12	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Chrysene	0.63		0.096	0.0096	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Dibenz(a,h)anthracene	ND		0.096	0.044	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Dibenzofuran	0.28	J	0.32	0.084	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Diethyl phthalate	ND		0.45	0.20	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Dimethyl phthalate	ND		0.45	0.090	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Di-n-butyl phthalate	ND		0.45	0.32	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Di-n-octyl phthalate	ND		0.45	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Fluoranthene	0.69		0.096	0.029	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Fluorene	0.079	J	0.096	0.018	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Hexachlorobenzene	ND		0.096	0.018	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Hexachlorobutadiene	ND		0.32	0.077	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Hexachlorocyclopentadiene	ND		2.1	0.40	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Hexachloroethane	ND		0.32	0.058	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Indeno[1,2,3-cd]pyrene	0.25		0.096	0.047	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Isophorone	ND		0.32	0.077	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
N-Nitrosodi-n-propylamine	ND		0.32	0.071	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
N-Nitrosodiphenylamine	ND		0.32	0.077	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Naphthalene	0.49		0.096	0.015	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Nitrobenzene	ND		0.64	0.084	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Pentachlorophenol	ND		0.96	0.37	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Phenanthrene	0.71		0.096	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Phenol	ND		0.32	0.051	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
Pyrene	0.68		0.096	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
3 & 4 Methylphenol	ND		2.6	0.19	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5
2-Butoxyethanol	5.0		0.45	0.42	mg/Kg	✳	03/15/23 09:31	03/17/23 15:33	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	47		46 - 137	03/15/23 09:31	03/17/23 15:33	5
Phenol-d5 (Surr)	45		26 - 120	03/15/23 09:31	03/17/23 15:33	5
Nitrobenzene-d5 (Surr)	43		25 - 120	03/15/23 09:31	03/17/23 15:33	5
2-Fluorophenol (Surr)	39		20 - 120	03/15/23 09:31	03/17/23 15:33	5
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 15:33	5
2,4,6-Tribromophenol (Surr)	35		10 - 120	03/15/23 09:31	03/17/23 15:33	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:22	1
Barium	0.86	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:22	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:22	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:22	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:22	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:22	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:22	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.7		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.3		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.29	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2,2-Tetrachloroethane	ND		0.29	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.29	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2-Trichloroethane	ND		0.29	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1-Dichloroethane	ND		0.29	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1-Dichloroethene	ND		0.29	0.096	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2,4-Trichlorobenzene	ND		0.29	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dibromo-3-Chloropropane	ND		0.58	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Ethylene Dibromide	ND		0.29	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichlorobenzene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloroethane	ND		0.29	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloropropane	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,3-Dichlorobenzene	ND		0.29	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,4-Dichlorobenzene	ND		0.29	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
2-Butanone (MEK)	ND		1.2	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
2-Hexanone	ND		1.2	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Acetone	ND		1.2	0.29	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Benzene	0.12	J	0.29	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Dichlorobromomethane	ND		0.29	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Bromoform	ND		0.29	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Bromomethane	ND		0.29	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Carbon disulfide	ND		0.29	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Carbon tetrachloride	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chlorobenzene	ND		0.29	0.041	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloroethane	ND		0.29	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloroform	ND		0.29	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloromethane	ND		0.29	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
cis-1,2-Dichloroethene	ND		0.29	0.047	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
cis-1,3-Dichloropropene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Cyclohexane	ND		0.58	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chlorodibromomethane	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Dichlorodifluoromethane	ND		0.29	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Ethylbenzene	ND		0.29	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Isopropylbenzene	ND		0.29	0.044	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methyl acetate	0.62	J	1.5	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methyl tert-butyl ether	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methylcyclohexane	0.28	J	0.58	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methylene Chloride	ND		0.58	0.45	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Styrene	ND		0.29	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Tetrachloroethene	ND		0.29	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Toluene	ND		0.29	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
trans-1,2-Dichloroethene	ND		0.29	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
trans-1,3-Dichloropropene	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Trichloroethene	ND		0.29	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Trichlorofluoromethane	ND		0.29	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Vinyl chloride	2.2		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Xylenes, Total	0.19	J	0.58	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Butyl acrylate	67		49	26	mg/Kg	✱	03/15/23 13:01	03/17/23 19:42	16.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		9.7	2.3	mg/Kg	☼	03/15/23 13:01	03/17/23 19:42	16.6666
2-Ethylhexyl acrylate	190		49	36	mg/Kg	☼	03/15/23 13:01	03/17/23 19:42	16.6666

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		56 - 125				03/15/23 13:01	03/17/23 11:43	1
Toluene-d8 (Surr)	105		56 - 125				03/15/23 13:01	03/17/23 19:42	16.6666
Dibromofluoromethane (Surr)	79		41 - 138				03/15/23 13:01	03/17/23 11:43	1
Dibromofluoromethane (Surr)	93		41 - 138				03/15/23 13:01	03/17/23 19:42	16.6666
4-Bromofluorobenzene (Surr)	95		41 - 143				03/15/23 13:01	03/17/23 11:43	1
4-Bromofluorobenzene (Surr)	112		41 - 143				03/15/23 13:01	03/17/23 19:42	16.6666
1,2-Dichloroethane-d4 (Surr)	77		58 - 125				03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125				03/15/23 13:01	03/17/23 19:42	16.6666

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dimethylphenol	ND		3.7	0.99	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dinitrophenol	ND		8.2	3.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dinitrotoluene	ND		5.0	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Methylnaphthalene	0.41		0.37	0.049	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Methylphenol	ND		5.0	0.77	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Nitroaniline	ND		5.0	0.99	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4,6-Dinitro-2-methylphenol	ND		8.2	2.0	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chloroaniline	ND		3.7	0.74	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Nitrophenol	ND		8.2	2.3	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acenaphthene	ND		0.37	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acenaphthylene	0.11	J	0.37	0.10	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acetophenone	ND		2.5	0.27	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Anthracene	0.28	J	0.37	0.060	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Atrazine	ND		5.0	0.89	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[a]anthracene	1.4		0.37	0.085	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[a]pyrene	0.53		0.37	0.23	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[g,h,i]perylene	0.34	J	0.37	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[k]fluoranthene	0.54		0.37	0.17	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Butyl benzyl phthalate	ND		1.7	0.55	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Caprolactam	ND		8.2	1.9	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Carbazole	ND		1.2	0.47	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Chrysene	2.0		0.37	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Dibenzofuran	ND		1.2	0.32	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Diethyl phthalate	ND		1.7	0.77	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Di-n-butyl phthalate	ND		1.7	1.3	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Di-n-octyl phthalate	ND		1.7	0.70	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Fluoranthene	2.4		0.37	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Fluorene	0.11	J	0.37	0.068	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Hexachlorobenzene	ND		0.37	0.071	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Hexachlorocyclopentadiene	ND		8.2	1.5	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Indeno[1,2,3-cd]pyrene	0.34	J	0.37	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Isophorone	ND		1.2	0.30	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Naphthalene	0.27	J	0.37	0.060	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Phenanthrene	0.78		0.37	0.055	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Phenol	ND		1.2	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
Pyrene	2.1		0.37	0.053	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
3 & 4 Methylphenol	ND		9.9	0.72	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20
2-Butoxyethanol	18		1.7	1.6	mg/Kg	✱	03/15/23 09:31	03/17/23 18:00	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	46		46 - 137	03/15/23 09:31	03/17/23 18:00	20
Phenol-d5 (Surr)	33		26 - 120	03/15/23 09:31	03/17/23 18:00	20
Nitrobenzene-d5 (Surr)	33		25 - 120	03/15/23 09:31	03/17/23 18:00	20
2-Fluorophenol (Surr)	33		20 - 120	03/15/23 09:31	03/17/23 18:00	20
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 18:00	20
2,4,6-Tribromophenol (Surr)	21		10 - 120	03/15/23 09:31	03/17/23 18:00	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:35	1
Barium	0.48	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:35	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:35	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:35	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:35	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:35	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:35	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.9		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.1		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.32	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2,2-Tetrachloroethane	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	0.087	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2-Trichloroethane	ND		0.32	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1-Dichloroethane	ND		0.32	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1-Dichloroethene	ND		0.32	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2,4-Trichlorobenzene	ND		0.32	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dibromo-3-Chloropropane	ND		0.65	0.29	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Ethylene Dibromide	ND		0.32	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichlorobenzene	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloroethane	ND		0.32	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloropropane	ND		0.32	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,3-Dichlorobenzene	ND		0.32	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,4-Dichlorobenzene	ND		0.32	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
2-Butanone (MEK)	ND		1.3	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
2-Hexanone	ND		1.3	0.34	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Acetone	ND		1.3	0.32	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Benzene	ND		0.32	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Dichlorobromomethane	ND		0.32	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Bromoform	ND		0.32	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Bromomethane	ND		0.32	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Carbon disulfide	ND		0.32	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Carbon tetrachloride	ND		0.32	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chlorobenzene	ND		0.32	0.045	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloroethane	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloroform	ND		0.32	0.070	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloromethane	ND		0.32	0.086	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
cis-1,2-Dichloroethene	ND		0.32	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
cis-1,3-Dichloropropene	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Cyclohexane	ND		0.65	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chlorodibromomethane	ND		0.32	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Dichlorodifluoromethane	ND		0.32	0.069	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Ethylbenzene	ND		0.32	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Isopropylbenzene	ND		0.32	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methyl acetate	0.23	J	1.6	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methyl tert-butyl ether	ND		0.32	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methylcyclohexane	0.41	J	0.65	0.086	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methylene Chloride	ND		0.65	0.50	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Styrene	ND		0.32	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Tetrachloroethene	ND		0.32	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Toluene	ND		0.32	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
trans-1,2-Dichloroethene	ND		0.32	0.080	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
trans-1,3-Dichloropropene	ND		0.32	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Trichloroethene	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Trichlorofluoromethane	ND		0.32	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Vinyl chloride	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Xylenes, Total	0.31	J	0.65	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Butyl acrylate	61		54	29	mg/Kg	✱	03/15/23 13:01	03/17/23 18:16	16.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		11	2.6	mg/Kg	✱	03/15/23 13:01	03/17/23 18:16	16.6666
2-Ethylhexyl acrylate	160		54	40	mg/Kg	✱	03/15/23 13:01	03/17/23 18:16	16.6666
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		56 - 125				03/15/23 13:01	03/17/23 12:31	1
Toluene-d8 (Surr)	107		56 - 125				03/15/23 13:01	03/17/23 18:16	16.6666
Dibromofluoromethane (Surr)	79		41 - 138				03/15/23 13:01	03/17/23 12:31	1
Dibromofluoromethane (Surr)	93		41 - 138				03/15/23 13:01	03/17/23 18:16	16.6666
4-Bromofluorobenzene (Surr)	97		41 - 143				03/15/23 13:01	03/17/23 12:31	1
4-Bromofluorobenzene (Surr)	112		41 - 143				03/15/23 13:01	03/17/23 18:16	16.6666
1,2-Dichloroethane-d4 (Surr)	78		58 - 125				03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125				03/15/23 13:01	03/17/23 18:16	16.6666

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.068	J	0.15	0.052	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
bis (2-chloroisopropyl) ether	ND		0.31	0.031	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4,5-Trichlorophenol	ND		0.46	0.21	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4,6-Trichlorophenol	ND		0.46	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dichlorophenol	ND		0.46	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dimethylphenol	ND		0.46	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dinitrophenol	ND		1.0	0.44	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dinitrotoluene	ND		0.61	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2,6-Dinitrotoluene	ND		0.61	0.17	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Chloronaphthalene	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Chlorophenol	ND		0.15	0.031	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Methylnaphthalene	0.70		0.046	0.0060	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Methylphenol	ND		0.61	0.095	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Nitroaniline	ND		0.61	0.12	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Nitrophenol	ND		0.15	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
3,3'-Dichlorobenzidine	ND		0.31	0.13	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
3-Nitroaniline	ND		0.61	0.15	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Bromophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Chloro-3-methylphenol	ND		0.46	0.14	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Chloroaniline	ND		0.46	0.092	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Chlorophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Nitroaniline	ND		0.61	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
4-Nitrophenol	ND		1.0	0.29	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Acenaphthene	0.12		0.046	0.0088	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Acenaphthylene	0.16		0.046	0.012	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Acetophenone	ND		0.31	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Anthracene	0.28		0.046	0.0074	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Atrazine	ND		0.61	0.11	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzaldehyde	ND		0.31	0.071	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[a]anthracene	0.62		0.046	0.010	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[a]pyrene	0.51		0.046	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[b]fluoranthene	1.2		0.046	0.020	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[g,h,i]perylene	0.35		0.046	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[k]fluoranthene	0.32		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Bis(2-chloroethyl)ether	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Butyl benzyl phthalate	ND		0.22	0.068	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Caprolactam	ND		1.0	0.23	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Carbazole	0.14	J	0.15	0.058	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Chrysene	0.98		0.046	0.0046	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Dibenz(a,h)anthracene	0.12		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Dibenzofuran	0.28		0.15	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Diethyl phthalate	ND		0.22	0.095	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Dimethyl phthalate	ND		0.22	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Di-n-octyl phthalate	ND		0.22	0.086	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Fluoranthene	1.2		0.046	0.014	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Fluorene	0.14		0.046	0.0084	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorobenzene	ND		0.046	0.0088	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorobutadiene	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorocyclopentadiene	ND		1.0	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Hexachloroethane	ND		0.15	0.028	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Indeno[1,2,3-cd]pyrene	0.37		0.046	0.023	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Isophorone	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
N-Nitrosodi-n-propylamine	ND		0.15	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
N-Nitrosodiphenylamine	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Naphthalene	0.43		0.046	0.0074	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Nitrobenzene	ND		0.31	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Pentachlorophenol	ND		0.46	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Phenanthrene	0.91		0.046	0.0069	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Phenol	ND		0.15	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
Pyrene	1.2		0.046	0.0066	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
3 & 4 Methylphenol	ND		1.2	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5
2-Butoxyethanol	3.0		0.22	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 19:13	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	84		46 - 137	03/15/23 09:31	03/17/23 19:13	2.5
Phenol-d5 (Surr)	82		26 - 120	03/15/23 09:31	03/17/23 19:13	2.5
Nitrobenzene-d5 (Surr)	69		25 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2-Fluorophenol (Surr)	78		20 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2-Fluorobiphenyl (Surr)	78		34 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2,4,6-Tribromophenol (Surr)	60		10 - 120	03/15/23 09:31	03/17/23 19:13	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:39	1
Barium	0.53	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:39	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:39	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:39	1
Lead	0.0036	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:39	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:39	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.1		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.9		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1-Dichloroethane	ND		0.34	0.066	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dibromo-3-Chloropropane	ND		0.69	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichloropropane	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
2-Butanone (MEK)	ND		1.4	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Acetone	0.35	J	1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Benzene	0.068	J	0.34	0.058	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloromethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
cis-1,2-Dichloroethene	ND		0.34	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Cyclohexane	ND		0.69	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Dichlorodifluoromethane	ND		0.34	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Ethylbenzene	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Isopropylbenzene	0.059	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methyl tert-butyl ether	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methylcyclohexane	0.71		0.69	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methylene Chloride	ND		0.69	0.53	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
trans-1,2-Dichloroethene	ND		0.34	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Trichloroethene	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Vinyl chloride	0.25	J	0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Xylenes, Total	0.55	J	0.69	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Butyl acrylate	340		340	190	mg/Kg	✱	03/15/23 13:01	03/17/23 01:53	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		69	16	mg/Kg	☼	03/15/23 13:01	03/17/23 01:53	100
2-Ethylhexyl acrylate	720		340	260	mg/Kg	☼	03/15/23 13:01	03/17/23 01:53	100

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	107		56 - 125				03/15/23 13:01	03/17/23 01:53	100
<i>Toluene-d8 (Surr)</i>	96		56 - 125				03/15/23 13:01	03/17/23 13:19	1
<i>Dibromofluoromethane (Surr)</i>	92		41 - 138				03/15/23 13:01	03/17/23 01:53	100
<i>Dibromofluoromethane (Surr)</i>	80		41 - 138				03/15/23 13:01	03/17/23 13:19	1
<i>4-Bromofluorobenzene (Surr)</i>	110		41 - 143				03/15/23 13:01	03/17/23 01:53	100
<i>4-Bromofluorobenzene (Surr)</i>	88		41 - 143				03/15/23 13:01	03/17/23 13:19	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		58 - 125				03/15/23 13:01	03/17/23 01:53	100
<i>1,2-Dichloroethane-d4 (Surr)</i>	78		58 - 125				03/15/23 13:01	03/17/23 13:19	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.5	2.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4,5-Trichlorophenol	ND		20	9.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4,6-Trichlorophenol	ND		20	8.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dichlorophenol	ND		20	5.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dimethylphenol	ND		20	5.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dinitrophenol	ND		43	19	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dinitrotoluene	ND		26	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,6-Dinitrotoluene	ND		26	7.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Chloronaphthalene	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Chlorophenol	ND		6.5	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Methylnaphthalene	0.74	J	2.0	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Methylphenol	ND		26	4.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Nitroaniline	ND		26	5.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Nitrophenol	ND		6.5	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3,3'-Dichlorobenzidine	ND		13	5.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3-Nitroaniline	ND		26	6.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4,6-Dinitro-2-methylphenol	ND		43	10	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Bromophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chloro-3-methylphenol	ND		20	5.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chloroaniline	ND		20	3.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chlorophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Nitroaniline	ND		26	7.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Nitrophenol	ND		43	12	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acenaphthene	ND		2.0	0.37	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acenaphthylene	ND		2.0	0.52	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acetophenone	ND		13	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Anthracene	0.49	J	2.0	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Atrazine	ND		26	4.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzaldehyde	ND		13	3.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[a]anthracene	1.6	J	2.0	0.45	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[a]pyrene	ND		2.0	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[b]fluoranthene	1.8	J	2.0	0.85	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[g,h,i]perylene	ND		2.0	0.93	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[k]fluoranthene	ND		2.0	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		13	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Bis(2-chloroethyl)ether	ND		13	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Bis(2-ethylhexyl) phthalate	ND		9.2	6.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Butyl benzyl phthalate	ND		9.2	2.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Caprolactam	ND		43	9.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Carbazole	ND		6.5	2.5	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Chrysene	1.8	J	2.0	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dibenz(a,h)anthracene	ND		2.0	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dibenzofuran	ND		6.5	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Diethyl phthalate	ND		9.2	4.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dimethyl phthalate	ND		9.2	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Di-n-butyl phthalate	ND		9.2	6.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Di-n-octyl phthalate	ND		9.2	3.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Fluoranthene	3.8		2.0	0.58	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Fluorene	ND		2.0	0.36	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorobenzene	ND		2.0	0.37	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorobutadiene	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorocyclopentadiene	ND		43	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachloroethane	ND		6.5	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Indeno[1,2,3-cd]pyrene	ND		2.0	0.96	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Isophorone	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
N-Nitrosodi-n-propylamine	ND		6.5	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
N-Nitrosodiphenylamine	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Naphthalene	0.58	J	2.0	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Nitrobenzene	ND		13	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Pentachlorophenol	ND		20	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Phenanthrene	1.5	J	2.0	0.29	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Phenol	ND		6.5	1.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Pyrene	3.8		2.0	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3 & 4 Methylphenol	ND		52	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Butoxyethanol	120		9.2	8.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	43	S1-	46 - 137	03/15/23 09:31	03/17/23 17:11	100
Phenol-d5 (Surr)	44		26 - 120	03/15/23 09:31	03/17/23 17:11	100
Nitrobenzene-d5 (Surr)	23	S1-	25 - 120	03/15/23 09:31	03/17/23 17:11	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	03/15/23 09:31	03/17/23 17:11	100
2-Fluorobiphenyl (Surr)	33	S1-	34 - 120	03/15/23 09:31	03/17/23 17:11	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/15/23 09:31	03/17/23 17:11	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:44	1
Barium	0.44	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:44	1
Cadmium	0.0016	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:44	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:44	1
Lead	0.013	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:44	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:44	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.5		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.5		0.1	0.1	%			03/15/23 13:31	1

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/17/23 15:56	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/17/23 15:56	1
2-Butanone (MEK)	0.027	J B	0.25	0.0012	mg/L			03/17/23 15:56	1
Benzene	ND		0.025	0.00042	mg/L			03/17/23 15:56	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/17/23 15:56	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/17/23 15:56	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:56	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:56	1
Vinyl chloride	0.0075	J F2	0.025	0.00045	mg/L			03/17/23 15:56	1
Chloroform	ND		0.025	0.00047	mg/L			03/17/23 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/17/23 15:56	1
Dibromofluoromethane (Surr)	98		71 - 121		03/17/23 15:56	1
4-Bromofluorobenzene (Surr)	95		80 - 120		03/17/23 15:56	1
1,2-Dichloroethane-d4 (Surr)	101		76 - 120		03/17/23 15:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/16/23 11:22	03/18/23 16:01	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/16/23 11:22	03/18/23 16:01	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/16/23 11:22	03/18/23 16:01	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/16/23 11:22	03/18/23 16:01	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/16/23 11:22	03/18/23 16:01	1
Pyridine	ND		0.0040	0.00036	mg/L		03/16/23 11:22	03/18/23 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	116		46 - 137	03/16/23 11:22	03/18/23 16:01	1
Phenol-d5 (Surr)	62		26 - 120	03/16/23 11:22	03/18/23 16:01	1
Nitrobenzene-d5 (Surr)	71		24 - 120	03/16/23 11:22	03/18/23 16:01	1
2-Fluorophenol (Surr)	69		19 - 120	03/16/23 11:22	03/18/23 16:01	1
2-Fluorobiphenyl (Surr)	93		33 - 120	03/16/23 11:22	03/18/23 16:01	1
2,4,6-Tribromophenol (Surr)	90		10 - 120	03/16/23 11:22	03/18/23 16:01	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/16/23 11:26	03/17/23 11:58	1
Endrin	ND		0.00050	0.0000065	mg/L		03/16/23 11:26	03/17/23 11:58	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/16/23 11:26	03/17/23 11:58	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/16/23 11:26	03/17/23 11:58	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/16/23 11:26	03/17/23 11:58	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/16/23 11:26	03/17/23 11:58	1
Toxaphene	ND		0.020	0.000058	mg/L		03/16/23 11:26	03/17/23 11:58	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		10 - 145	03/16/23 11:26	03/17/23 11:58	1
DCB Decachlorobiphenyl	70		10 - 145	03/16/23 11:26	03/17/23 11:58	1
Tetrachloro-m-xylene	57		10 - 123	03/16/23 11:26	03/17/23 11:58	1
Tetrachloro-m-xylene	54		10 - 123	03/16/23 11:26	03/17/23 11:58	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 06:50	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 06:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	03/20/23 19:00	03/21/23 06:50	1
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136	03/20/23 19:00	03/21/23 06:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			03/15/23 14:34	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			03/15/23 14:34	1

Preliminary Data

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		60	30	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1221	ND		60	36	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1232	ND		60	25	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1242	ND		60	23	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1248	ND		60	20	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1254	ND		60	25	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1260	ND		60	25	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1262	ND		60	26	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1268	ND		60	19	ug/Kg	☼	03/16/23 08:44	03/16/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		10 - 149	03/16/23 08:44	03/16/23 18:56	1
DCB Decachlorobiphenyl	64		10 - 174	03/16/23 08:44	03/16/23 18:56	1

Preliminary

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-181894-1	WC-S. TRK-WEST-01 (2-4)	113	96	118	107
240-181894-1	WC-S. TRK-WEST-01 (2-4)	97	81	89	79
240-181894-2	WC-S. TRK-WEST-02 (6-8)	110	93	115	106
240-181894-2	WC-S. TRK-WEST-02 (6-8)	92	80	100	82
240-181894-2	WC-S. TRK-WEST-02 (6-8)	108	89	111	101
240-181894-3	WC-S. TRK-WEST-03 (2-4)	113	89	117	103
240-181894-4	WC-S. TRK-WEST-04 (4-6)	88	77	97	77
240-181894-4	WC-S. TRK-WEST-04 (4-6)	109	95	114	105
240-181894-5	WC-S. TRK-WEST-05 (4-6)	112	87	113	102
240-181894-6	WC-S. TRK-WEST-06 (6-8)	111	86	113	103
240-181894-7	WC-S. TRK-WEST-07 (8-10)	110	92	112	101
240-181894-7	WC-S. TRK-WEST-07 (8-10)	104	82	81	80
240-181894-7	WC-S. TRK-WEST-07 (8-10)	87	83	84	89
240-181894-9	WC-S. TRK-WEST-08 (8-10)	91	80	104	79
240-181894-9	WC-S. TRK-WEST-08 (8-10)	108	94	113	104
240-181894-10	WC-S. TRK-WEST-09 (10-12)	110	89	111	101
240-181894-10	WC-S. TRK-WEST-09 (10-12)	90	81	102	84
240-181894-10	WC-S. TRK-WEST-09 (10-12)	109	94	114	105
240-181894-11	WC-S. TRK-WEST-10 (10-12)	110	88	113	103
240-181894-12	WC-S. TRK-WEST-11 (12-14)	89	79	97	80
240-181894-12	WC-S. TRK-WEST-11 (12-14)	109	94	114	103
240-181894-13	WC-S. TRK-WEST-12 (12-14)	91	79	95	77
240-181894-13	WC-S. TRK-WEST-12 (12-14)	105	93	112	106
240-181894-14	WC-S. TRK-WEST-13 (14-16)	89	79	97	78
240-181894-14	WC-S. TRK-WEST-13 (14-16)	107	93	112	105
240-181894-15	WC-S. TRK-WEST-14 (14-16)	107	92	110	102
240-181894-15	WC-S. TRK-WEST-14 (14-16)	96	80	88	78
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	108	96	112	98
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	103	87	89	81
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	112	99	115	101
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	95	82	86	77
LCS 240-565503/2-A	Lab Control Sample	114	97	118	98
LCS 240-565503/2-A	Lab Control Sample	92	86	101	84
MB 240-565503/1-A	Method Blank	113	91	116	104
MB 240-565503/1-A	Method Blank	90	85	104	89

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-565827/10	Lab Control Sample	104	105	101	104

Surrogate Legend

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	91	94	89	97
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	95	98	95	101
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	101	99	100	96
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	94	96	96	97
LB 240-565528/1-A MB	Method Blank	94	94	88	97

Surrogate Legend

TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-181894-1	WC-S. TRK-WEST-01 (2-4)	44 S1-	52	39	44	43	33
240-181894-2	WC-S. TRK-WEST-02 (6-8)	63	56	61	57	56	47
240-181894-3	WC-S. TRK-WEST-03 (2-4)	73	63	58	58	70	71
240-181894-4	WC-S. TRK-WEST-04 (4-6)	39 S1-	48	38	38	36	28
240-181894-5	WC-S. TRK-WEST-05 (4-6)	63	49	39	41	55	50
240-181894-6	WC-S. TRK-WEST-06 (6-8)	66	57	45	48	58	57
240-181894-7	WC-S. TRK-WEST-07 (8-10)	48	39	37	43	43	21
240-181894-9	WC-S. TRK-WEST-08 (8-10)	52	40	32	35	42	32
240-181894-10	WC-S. TRK-WEST-09 (10-12)	53	47	33	42	47	34
240-181894-11	WC-S. TRK-WEST-10 (10-12)	49	40	24 S1-	0 S1-	36	0 S1-
240-181894-12	WC-S. TRK-WEST-11 (12-14)	47	45	43	39	43	35
240-181894-13	WC-S. TRK-WEST-12 (12-14)	46	33	33	33	43	21
240-181894-14	WC-S. TRK-WEST-13 (14-16)	84	82	69	78	78	60
240-181894-15	WC-S. TRK-WEST-14 (14-16)	43 S1-	44	23 S1-	0 S1-	33 S1-	0 S1-
LCS 240-565464/2-A	Lab Control Sample	96	76	74	69	78	65
MB 240-565464/1-A	Method Blank	106	67	76	54	83	34

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-565653/9-A	Lab Control Sample	106	63	69	70	91	93
MB 240-565653/8-A	Method Blank	117	61	67	70	92	73

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	123	64	72	71	96	94
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	116	62	71	69	93	90

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-565654/7-A	Lab Control Sample	74	73	61	69
MB 240-565654/6-A	Method Blank	72	73	52	59

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	73	72	60	59
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	71	70	57	54

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine
 TCX = Tetrachloro-m-xylene

Job ID: 240-181894-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (10-149)	DCBP1 (10-174)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	78	63
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	77	64
LCS 240-565605/2-A	Lab Control Sample	112	97
MB 240-565605/1-A	Method Blank	92	76

Surrogate Legend

TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-355463/4-A	Lab Control Sample	61	66
MB 410-355463/1-A	Method Blank	58	63
MB 410-355463/2-A	Method Blank	61	68
MB 410-355463/3-A	Method Blank	63	67

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	58	63
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	60	65

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-565503/1-A
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Acetone	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Benzene	ND		0.25	0.042	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Bromoform	ND		0.25	0.23	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloroform	ND		0.25	0.054	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Styrene	ND		0.25	0.052	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Toluene	ND		0.25	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/15/23 13:01	03/16/23 17:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565503/1-A
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		2.5	1.4	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
Toluene-d8 (Surr)	113		56 - 125				03/15/23 13:01	03/16/23 17:51	1
Dibromofluoromethane (Surr)	91		41 - 138				03/15/23 13:01	03/16/23 17:51	1
4-Bromofluorobenzene (Surr)	116		41 - 143				03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125				03/15/23 13:01	03/16/23 17:51	1

Lab Sample ID: MB 240-565503/1-A
Matrix: Solid
Analysis Batch: 565727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Acetone	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Benzene	ND		0.25	0.042	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Bromoform	ND		0.25	0.23	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloroform	ND		0.25	0.054	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/15/23 13:01	03/17/23 04:55	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565503/1-A
Matrix: Solid
Analysis Batch: 565727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565503

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Styrene	ND		0.25	0.052	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Toluene	ND		0.25	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Butyl acrylate	ND		2.5	1.4	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		03/15/23 13:01	03/17/23 04:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	90		56 - 125	03/15/23 13:01	03/17/23 04:55	1
Dibromofluoromethane (Surr)	85		41 - 138	03/15/23 13:01	03/17/23 04:55	1
4-Bromofluorobenzene (Surr)	104		41 - 143	03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125	03/15/23 13:01	03/17/23 04:55	1

Lab Sample ID: LCS 240-565503/2-A
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	1.25	1.41		mg/Kg		113	74 - 136
1,1,1,2-Tetrachloroethane	1.25	1.33		mg/Kg		107	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.30		mg/Kg		104	64 - 148
1,1,2-Trichloroethane	1.25	1.33		mg/Kg		106	79 - 120
1,1-Dichloroethane	1.25	1.27		mg/Kg		101	74 - 121
1,1-Dichloroethene	1.25	1.27		mg/Kg		101	68 - 141
1,2,4-Trichlorobenzene	1.25	1.31		mg/Kg		104	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	1.03		mg/Kg		83	52 - 133
Ethylene Dibromide	1.25	1.25		mg/Kg		100	80 - 121
1,2-Dichlorobenzene	1.25	1.37		mg/Kg		109	73 - 120
1,2-Dichloroethane	1.25	1.24		mg/Kg		99	71 - 123
1,2-Dichloropropane	1.25	1.20		mg/Kg		96	76 - 126
1,3-Dichlorobenzene	1.25	1.37		mg/Kg		109	73 - 120
1,4-Dichlorobenzene	1.25	1.40		mg/Kg		112	74 - 120
2-Butanone (MEK)	2.50	2.44		mg/Kg		97	63 - 142
2-Hexanone	2.50	2.54		mg/Kg		101	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.49		mg/Kg		99	62 - 142
Acetone	2.50	2.80		mg/Kg		112	58 - 160

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.25	1.32		mg/Kg		106	76 - 121
Dichlorobromomethane	1.25	1.14		mg/Kg		91	71 - 138
Bromoform	1.25	0.964		mg/Kg		77	57 - 140
Bromomethane	1.25	1.18		mg/Kg		94	10 - 171
Carbon disulfide	1.25	1.04		mg/Kg		83	43 - 152
Carbon tetrachloride	1.25	1.20		mg/Kg		96	64 - 144
Chlorobenzene	1.25	1.35		mg/Kg		108	80 - 120
Chloroethane	1.25	0.815		mg/Kg		65	11 - 164
Chloroform	1.25	1.31		mg/Kg		105	78 - 120
Chloromethane	1.25	1.26		mg/Kg		101	41 - 142
cis-1,2-Dichloroethene	1.25	1.28		mg/Kg		103	78 - 124
cis-1,3-Dichloropropene	1.25	1.17		mg/Kg		93	70 - 133
Cyclohexane	1.25	1.27		mg/Kg		101	65 - 137
Chlorodibromomethane	1.25	1.07		mg/Kg		85	68 - 131
Dichlorodifluoromethane	1.25	1.62		mg/Kg		129	21 - 150
Ethylbenzene	1.25	1.40		mg/Kg		112	80 - 120
Isopropylbenzene	1.25	1.46		mg/Kg		117	80 - 130
Methyl acetate	2.50	2.21		mg/Kg		89	60 - 133
Methyl tert-butyl ether	1.25	1.18		mg/Kg		95	70 - 130
Methylcyclohexane	1.25	1.37		mg/Kg		109	70 - 138
Methylene Chloride	1.25	1.37		mg/Kg		110	71 - 124
Styrene	1.25	1.39		mg/Kg		111	75 - 140
Tetrachloroethene	1.25	1.49		mg/Kg		119	76 - 127
Toluene	1.25	1.44		mg/Kg		115	80 - 120
trans-1,2-Dichloroethene	1.25	1.25		mg/Kg		100	76 - 130
trans-1,3-Dichloropropene	1.25	1.28		mg/Kg		102	61 - 121
Trichloroethene	1.25	1.29		mg/Kg		103	74 - 130
Trichlorofluoromethane	1.25	1.30		mg/Kg		104	50 - 154
Vinyl chloride	1.25	1.41		mg/Kg		113	49 - 146
Xylenes, Total	2.50	2.80		mg/Kg		112	80 - 122
m-Xylene & p-Xylene	1.25	1.42		mg/Kg		113	80 - 122
o-Xylene	1.25	1.38		mg/Kg		110	80 - 124
Butyl acrylate	5.00	4.79		mg/Kg		96	61 - 120
Methyl acrylate	5.00	4.86		mg/Kg		97	76 - 120
2-Ethylhexyl acrylate	5.00	4.43		mg/Kg		89	57 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	114		56 - 125
Dibromofluoromethane (Surr)	97		41 - 138
4-Bromofluorobenzene (Surr)	118		41 - 143
1,2-Dichloroethane-d4 (Surr)	98		58 - 125

Lab Sample ID: LCS 240-565503/2-A
Matrix: Solid
Analysis Batch: 565727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.25	1.11		mg/Kg		89	74 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.30		mg/Kg		104	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.04		mg/Kg		83	64 - 148
1,1,2-Trichloroethane	1.25	1.21		mg/Kg		97	79 - 120
1,1-Dichloroethane	1.25	1.10		mg/Kg		88	74 - 121
1,1-Dichloroethene	1.25	1.07		mg/Kg		86	68 - 141
1,2,4-Trichlorobenzene	1.25	1.12		mg/Kg		89	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	1.09		mg/Kg		87	52 - 133
Ethylene Dibromide	1.25	1.20		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	1.25	1.14		mg/Kg		91	73 - 120
1,2-Dichloroethane	1.25	1.24		mg/Kg		99	71 - 123
1,2-Dichloropropane	1.25	1.20		mg/Kg		96	76 - 126
1,3-Dichlorobenzene	1.25	1.12		mg/Kg		90	73 - 120
1,4-Dichlorobenzene	1.25	1.12		mg/Kg		90	74 - 120
2-Butanone (MEK)	2.50	2.62		mg/Kg		105	63 - 142
2-Hexanone	2.50	2.90		mg/Kg		116	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.66		mg/Kg		106	62 - 142
Acetone	2.50	3.42		mg/Kg		137	58 - 160
Benzene	1.25	1.15		mg/Kg		92	76 - 121
Dichlorobromomethane	1.25	1.14		mg/Kg		92	71 - 138
Bromoform	1.25	1.02		mg/Kg		81	57 - 140
Bromomethane	1.25	0.740		mg/Kg		59	10 - 171
Carbon disulfide	1.25	0.926		mg/Kg		74	43 - 152
Carbon tetrachloride	1.25	1.04		mg/Kg		83	64 - 144
Chlorobenzene	1.25	1.13		mg/Kg		90	80 - 120
Chloroethane	1.25	0.711		mg/Kg		57	11 - 164
Chloroform	1.25	1.15		mg/Kg		92	78 - 120
Chloromethane	1.25	1.06		mg/Kg		85	41 - 142
cis-1,2-Dichloroethene	1.25	1.12		mg/Kg		90	78 - 124
cis-1,3-Dichloropropene	1.25	1.16		mg/Kg		93	70 - 133
Cyclohexane	1.25	1.13		mg/Kg		90	65 - 137
Chlorodibromomethane	1.25	1.10		mg/Kg		88	68 - 131
Dichlorodifluoromethane	1.25	0.878		mg/Kg		70	21 - 150
Ethylbenzene	1.25	1.18		mg/Kg		94	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		97	80 - 130
Methyl acetate	2.50	2.67		mg/Kg		107	60 - 133
Methyl tert-butyl ether	1.25	1.24		mg/Kg		99	70 - 130
Methylcyclohexane	1.25	1.10		mg/Kg		88	70 - 138
Methylene Chloride	1.25	1.14		mg/Kg		91	71 - 124
Styrene	1.25	1.19		mg/Kg		95	75 - 140
Tetrachloroethene	1.25	1.10		mg/Kg		88	76 - 127
Toluene	1.25	1.12		mg/Kg		90	80 - 120
trans-1,2-Dichloroethene	1.25	1.08		mg/Kg		87	76 - 130
trans-1,3-Dichloropropene	1.25	1.12		mg/Kg		89	61 - 121
Trichloroethene	1.25	1.08		mg/Kg		86	74 - 130
Trichlorofluoromethane	1.25	0.976		mg/Kg		78	50 - 154
Vinyl chloride	1.25	1.04		mg/Kg		83	49 - 146
Xylenes, Total	2.50	2.40		mg/Kg		96	80 - 122
m-Xylene & p-Xylene	1.25	1.20		mg/Kg		96	80 - 122

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	1.25	1.20		mg/Kg		96	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	92		56 - 125
Dibromofluoromethane (Surr)	86		41 - 138
4-Bromofluorobenzene (Surr)	101		41 - 143
1,2-Dichloroethane-d4 (Surr)	84		58 - 125

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	340		686	1140		mg/Kg	✖	116	10 - 150
Methyl acrylate	ND		686	782		mg/Kg	✖	114	10 - 150
2-Ethylhexyl acrylate	720		686	1470		mg/Kg	✖	109	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	108		56 - 125
Dibromofluoromethane (Surr)	96		41 - 138
4-Bromofluorobenzene (Surr)	112		41 - 143
1,2-Dichloroethane-d4 (Surr)	98		58 - 125

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		1.71	1.67		mg/Kg	✖	97	46 - 144
1,1,1,2-Tetrachloroethane	ND		1.71	1.48		mg/Kg	✖	86	26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.71	1.62		mg/Kg	✖	94	35 - 164
1,1,2-Trichloroethane	ND		1.71	1.68		mg/Kg	✖	98	26 - 149
1,1-Dichloroethane	ND		1.71	1.66		mg/Kg	✖	97	46 - 135
1,1-Dichloroethene	ND		1.71	1.72		mg/Kg	✖	100	44 - 160
1,2,4-Trichlorobenzene	ND		1.71	1.57		mg/Kg	✖	92	10 - 120
1,2-Dibromo-3-Chloropropane	ND		1.71	1.64		mg/Kg	✖	96	12 - 144
Ethylene Dibromide	ND		1.71	1.79		mg/Kg	✖	104	31 - 142
1,2-Dichlorobenzene	ND		1.71	1.66		mg/Kg	✖	97	10 - 126
1,2-Dichloroethane	ND		1.71	1.66		mg/Kg	✖	97	40 - 132
1,2-Dichloropropane	ND		1.71	1.71		mg/Kg	✖	100	45 - 133
1,3-Dichlorobenzene	ND		1.71	1.56		mg/Kg	✖	91	10 - 131
1,4-Dichlorobenzene	ND		1.71	1.56		mg/Kg	✖	91	10 - 129
2-Butanone (MEK)	ND		3.43	3.32		mg/Kg	✖	97	30 - 157
2-Hexanone	ND		3.43	4.92		mg/Kg	✖	143	20 - 166
4-Methyl-2-pentanone (MIBK)	ND		3.43	4.48		mg/Kg	✖	131	31 - 159
Acetone	0.35	J	3.43	3.95		mg/Kg	✖	105	35 - 167
Benzene	0.068	J	1.71	1.78		mg/Kg	✖	100	39 - 134

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Dichlorobromomethane	ND		1.71	1.49		mg/Kg	⊛	87		32 - 146
Bromoform	ND		1.71	1.41		mg/Kg	⊛	82		12 - 144
Bromomethane	ND		1.71	1.39		mg/Kg	⊛	81		10 - 161
Carbon disulfide	ND		1.71	1.42		mg/Kg	⊛	83		24 - 153
Carbon tetrachloride	ND		1.71	1.56		mg/Kg	⊛	91		37 - 145
Chlorobenzene	ND		1.71	1.65		mg/Kg	⊛	96		18 - 134
Chloroethane	ND		1.71	1.31		mg/Kg	⊛	76		14 - 159
Chloroform	ND		1.71	1.65		mg/Kg	⊛	96		43 - 134
Chloromethane	ND		1.71	1.63		mg/Kg	⊛	95		32 - 151
cis-1,2-Dichloroethene	ND		1.71	1.68		mg/Kg	⊛	98		48 - 132
cis-1,3-Dichloropropene	ND		1.71	1.56		mg/Kg	⊛	91		23 - 139
Cyclohexane	ND		1.71	1.89		mg/Kg	⊛	110		31 - 147
Chlorodibromomethane	ND		1.71	1.48		mg/Kg	⊛	86		25 - 143
Dichlorodifluoromethane	ND		1.71	1.34		mg/Kg	⊛	78		16 - 157
Ethylbenzene	ND		1.71	1.78		mg/Kg	⊛	104		17 - 137
Isopropylbenzene	0.059	J	1.71	1.84		mg/Kg	⊛	104		10 - 146
Methyl acetate	ND		3.43	4.06		mg/Kg	⊛	118		13 - 164
Methyl tert-butyl ether	ND		1.71	1.84		mg/Kg	⊛	107		55 - 134
Methylcyclohexane	0.71		1.71	2.40		mg/Kg	⊛	98		20 - 153
Methylene Chloride	ND		1.71	1.56		mg/Kg	⊛	91		38 - 145
Styrene	ND		1.71	1.82		mg/Kg	⊛	106		10 - 149
Tetrachloroethene	ND		1.71	1.76		mg/Kg	⊛	102		19 - 147
Toluene	ND		1.71	1.94		mg/Kg	⊛	113		30 - 137
trans-1,2-Dichloroethene	ND		1.71	1.71		mg/Kg	⊛	100		41 - 145
trans-1,3-Dichloropropene	ND		1.71	1.62		mg/Kg	⊛	95		19 - 130
Trichloroethene	ND		1.71	1.81		mg/Kg	⊛	105		21 - 158
Trichlorofluoromethane	ND		1.71	1.50		mg/Kg	⊛	88		36 - 161
Vinyl chloride	0.25	J	1.71	1.80		mg/Kg	⊛	90		32 - 163
Xylenes, Total	0.55	J	3.43	4.04		mg/Kg	⊛	102		17 - 138
m-Xylene & p-Xylene	0.28	J	1.71	2.11		mg/Kg	⊛	107		10 - 141
o-Xylene	0.27	J	1.71	1.93		mg/Kg	⊛	97		18 - 139

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	103		56 - 125
Dibromofluoromethane (Surr)	87		41 - 138
4-Bromofluorobenzene (Surr)	89		41 - 143
1,2-Dichloroethane-d4 (Surr)	81		58 - 125

Lab Sample ID: 240-181894-15 MSD

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Butyl acrylate	340		686	1100		mg/Kg	⊛	111		10 - 150	3	30
Methyl acrylate	ND		686	753		mg/Kg	⊛	110		10 - 150	4	30
2-Ethylhexyl acrylate	720		686	1440		mg/Kg	⊛	105		10 - 150	2	30

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MSD
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)
Prep Type: Total/NA
Prep Batch: 565503

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	112		56 - 125
Dibromofluoromethane (Surr)	99		41 - 138
4-Bromofluorobenzene (Surr)	115		41 - 143
1,2-Dichloroethane-d4 (Surr)	101		58 - 125

Lab Sample ID: 240-181894-15 MSD
Matrix: Solid
Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)
Prep Type: Total/NA
Prep Batch: 565503

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
1,1,1-Trichloroethane	ND		1.71	1.67		mg/Kg	☼	97	46 - 144	0	37	
1,1,2,2-Tetrachloroethane	ND		1.71	1.64		mg/Kg	☼	96	26 - 159	10	40	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.71	1.58		mg/Kg	☼	92	35 - 164	2	37	
1,1,2-Trichloroethane	ND		1.71	1.69		mg/Kg	☼	99	26 - 149	0	40	
1,1-Dichloroethane	ND		1.71	1.51		mg/Kg	☼	88	46 - 135	9	36	
1,1-Dichloroethene	ND		1.71	1.60		mg/Kg	☼	93	44 - 160	7	37	
1,2,4-Trichlorobenzene	ND		1.71	1.55		mg/Kg	☼	91	10 - 120	1	40	
1,2-Dibromo-3-Chloropropane	ND		1.71	1.79		mg/Kg	☼	104	12 - 144	9	40	
Ethylene Dibromide	ND		1.71	1.73		mg/Kg	☼	101	31 - 142	3	40	
1,2-Dichlorobenzene	ND		1.71	1.62		mg/Kg	☼	94	10 - 126	2	40	
1,2-Dichloroethane	ND		1.71	1.61		mg/Kg	☼	94	40 - 132	3	35	
1,2-Dichloropropane	ND		1.71	1.64		mg/Kg	☼	96	45 - 133	4	37	
1,3-Dichlorobenzene	ND		1.71	1.51		mg/Kg	☼	88	10 - 131	3	40	
1,4-Dichlorobenzene	ND		1.71	1.52		mg/Kg	☼	88	10 - 129	3	40	
2-Butanone (MEK)	ND		3.43	3.75		mg/Kg	☼	109	30 - 157	12	40	
2-Hexanone	ND		3.43	4.89		mg/Kg	☼	143	20 - 166	1	40	
4-Methyl-2-pentanone (MIBK)	ND		3.43	4.26		mg/Kg	☼	124	31 - 159	5	40	
Acetone	0.35	J	3.43	4.54		mg/Kg	☼	122	35 - 167	14	40	
Benzene	0.068	J	1.71	1.72		mg/Kg	☼	97	39 - 134	3	40	
Dichlorobromomethane	ND		1.71	1.43		mg/Kg	☼	83	32 - 146	4	39	
Bromoform	ND		1.71	1.43		mg/Kg	☼	84	12 - 144	2	40	
Bromomethane	ND		1.71	1.28		mg/Kg	☼	75	10 - 161	8	40	
Carbon disulfide	ND		1.71	1.34		mg/Kg	☼	78	24 - 153	6	40	
Carbon tetrachloride	ND		1.71	1.54		mg/Kg	☼	90	37 - 145	1	38	
Chlorobenzene	ND		1.71	1.60		mg/Kg	☼	93	18 - 134	3	40	
Chloroethane	ND		1.71	1.29		mg/Kg	☼	75	14 - 159	1	40	
Chloroform	ND		1.71	1.60		mg/Kg	☼	94	43 - 134	3	36	
Chloromethane	ND		1.71	1.68		mg/Kg	☼	98	32 - 151	3	38	
cis-1,2-Dichloroethene	ND		1.71	1.63		mg/Kg	☼	95	48 - 132	3	37	
cis-1,3-Dichloropropene	ND		1.71	1.54		mg/Kg	☼	90	23 - 139	1	39	
Cyclohexane	ND		1.71	1.87		mg/Kg	☼	109	31 - 147	1	39	
Chlorodibromomethane	ND		1.71	1.40		mg/Kg	☼	81	25 - 143	6	40	
Dichlorodifluoromethane	ND		1.71	1.39		mg/Kg	☼	81	16 - 157	4	40	
Ethylbenzene	ND		1.71	1.76		mg/Kg	☼	103	17 - 137	1	40	
Isopropylbenzene	0.059	J	1.71	1.86		mg/Kg	☼	105	10 - 146	1	40	
Methyl acetate	ND		3.43	3.76		mg/Kg	☼	110	13 - 164	8	40	
Methyl tert-butyl ether	ND		1.71	1.66		mg/Kg	☼	97	55 - 134	10	37	
Methylcyclohexane	0.71		1.71	2.43		mg/Kg	☼	100	20 - 153	1	40	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MSD

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 565727

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Methylene Chloride	ND		1.71	1.40		mg/Kg	☼	82	38 - 145	11	40	
Styrene	ND		1.71	1.79		mg/Kg	☼	105	10 - 149	1	40	
Tetrachloroethene	ND		1.71	1.74		mg/Kg	☼	102	19 - 147	1	40	
Toluene	ND		1.71	1.87		mg/Kg	☼	109	30 - 137	3	40	
trans-1,2-Dichloroethene	ND		1.71	1.55		mg/Kg	☼	91	41 - 145	10	37	
trans-1,3-Dichloropropene	ND		1.71	1.55		mg/Kg	☼	90	19 - 130	5	40	
Trichloroethene	ND		1.71	1.67		mg/Kg	☼	98	21 - 158	8	40	
Trichlorofluoromethane	ND		1.71	1.55		mg/Kg	☼	90	36 - 161	3	40	
Vinyl chloride	0.25	J	1.71	1.85		mg/Kg	☼	93	32 - 163	3	38	
Xylenes, Total	0.55	J	3.43	3.84		mg/Kg	☼	96	17 - 138	5	40	
m-Xylene & p-Xylene	0.28	J	1.71	1.98		mg/Kg	☼	99	10 - 141	6	40	
o-Xylene	0.27	J	1.71	1.86		mg/Kg	☼	93	18 - 139	4	40	
Surrogate	MSD	MSD	Limits									
	%Recovery	Qualifier		Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Toluene-d8 (Surr)	95		56 - 125									
Dibromofluoromethane (Surr)	82		41 - 138									
4-Bromofluorobenzene (Surr)	86		41 - 143									
1,2-Dichloroethane-d4 (Surr)	77		58 - 125									

Lab Sample ID: LCS 240-565827/10

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 565827

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
1,1-Dichloroethene	1.00	1.07		mg/L		107	74 - 127	
1,2-Dichloroethane	1.00	1.01		mg/L		101	72 - 120	
2-Butanone (MEK)	2.00	2.38		mg/L		119	68 - 130	
Benzene	1.00	1.05		mg/L		105	80 - 121	
Carbon tetrachloride	1.00	0.955		mg/L		95	69 - 120	
Chlorobenzene	1.00	1.04		mg/L		104	80 - 120	
Chloroform	1.00	1.02		mg/L		102	75 - 120	
Tetrachloroethene	1.00	1.05		mg/L		105	74 - 120	
Trichloroethene	1.00	0.974		mg/L		97	75 - 120	
Vinyl chloride	1.00	0.725		mg/L		72	53 - 147	
Surrogate	LCS	LCS	Limits					
	%Recovery	Qualifier		Result	Qualifier	Unit	D	%Rec
Toluene-d8 (Surr)	104		80 - 120					
Dibromofluoromethane (Surr)	105		71 - 121					
4-Bromofluorobenzene (Surr)	101		80 - 120					
1,2-Dichloroethane-d4 (Surr)	104		76 - 120					

Lab Sample ID: LB 240-565528/1-A MB

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: TCLP

Analysis Batch: 565827

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/17/23 14:45	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/17/23 14:45	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-565528/1-A MB
Matrix: Solid
Analysis Batch: 565827

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	0.0187	J	0.25	0.0012	mg/L			03/17/23 14:45	1
Benzene	ND		0.025	0.00042	mg/L			03/17/23 14:45	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/17/23 14:45	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/17/23 14:45	1
Chloroform	ND		0.025	0.00047	mg/L			03/17/23 14:45	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/17/23 14:45	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/17/23 14:45	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/17/23 14:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		03/17/23 14:45	1
Dibromofluoromethane (Surr)	94		71 - 121		03/17/23 14:45	1
4-Bromofluorobenzene (Surr)	88		80 - 120		03/17/23 14:45	1
1,2-Dichloroethane-d4 (Surr)	97		76 - 120		03/17/23 14:45	1

Lab Sample ID: 240-181894-16 MS
Matrix: Solid
Analysis Batch: 565827

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	ND		1.00	0.981		mg/L		98	72 - 127
1,2-Dichloroethane	ND		1.00	0.896		mg/L		90	70 - 120
2-Butanone (MEK)	0.027	J B	2.00	2.24		mg/L		111	76 - 127
Benzene	ND		1.00	0.994		mg/L		99	80 - 124
Carbon tetrachloride	ND		1.00	0.848		mg/L		85	63 - 120
Chlorobenzene	ND		1.00	0.958		mg/L		96	80 - 120
Chloroform	ND		1.00	0.947		mg/L		95	75 - 121
Tetrachloroethene	ND		1.00	0.980		mg/L		98	68 - 120
Trichloroethene	ND		1.00	1.01		mg/L		101	70 - 120
Vinyl chloride	0.0075	J F2	1.00	0.835		mg/L		83	55 - 144

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	99		71 - 121
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		76 - 120

Lab Sample ID: 240-181894-16 MSD
Matrix: Solid
Analysis Batch: 565827

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		1.00	1.02		mg/L		102	72 - 127	4	11
1,2-Dichloroethane	ND		1.00	0.983		mg/L		98	70 - 120	9	10
2-Butanone (MEK)	0.027	J B	2.00	2.43		mg/L		120	76 - 127	8	17
Benzene	ND		1.00	1.03		mg/L		103	80 - 124	4	10
Carbon tetrachloride	ND		1.00	0.914		mg/L		91	63 - 120	7	11
Chlorobenzene	ND		1.00	0.999		mg/L		100	80 - 120	4	10

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-16 MSD
Matrix: Solid
Analysis Batch: 565827

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloroform	ND		1.00	1.00		mg/L		100	75 - 121	5	10
Tetrachloroethene	ND		1.00	1.01		mg/L		101	68 - 120	3	10
Trichloroethene	ND		1.00	0.956		mg/L		96	70 - 120	6	10
Vinyl chloride	0.0075	J F2	1.00	0.697	F2	mg/L		69	55 - 144	18	11
Surrogate	MSD	MSD	Limits								
	%Recovery	Qualifier	Limits								
<i>Toluene-d8 (Surr)</i>	94		80 - 120								
<i>Dibromofluoromethane (Surr)</i>	96		71 - 121								
<i>4-Bromofluorobenzene (Surr)</i>	96		80 - 120								
<i>1,2-Dichloroethane-d4 (Surr)</i>	97		76 - 120								

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-565464/1-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565464

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Atrazine	ND		0.20	0.036	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-565464/1-A
Matrix: Solid
Analysis Batch: 565783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565464

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Carbazole	ND		0.050	0.019	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Isophorone	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenol	ND		0.050	0.0080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	03/15/23 09:31	03/17/23 12:41	1
Phenol-d5 (Surr)	67		26 - 120	03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene-d5 (Surr)	76		25 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorophenol (Surr)	54		20 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorobiphenyl (Surr)	83		34 - 120	03/15/23 09:31	03/17/23 12:41	1
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/15/23 09:31	03/17/23 12:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A
Matrix: Solid
Analysis Batch: 566020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.469		mg/Kg		70	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.452		mg/Kg		68	38 - 120
2,4,5-Trichlorophenol	0.667	0.457		mg/Kg		69	50 - 120
2,4,6-Trichlorophenol	0.667	0.473		mg/Kg		71	50 - 120
2,4-Dichlorophenol	0.667	0.480		mg/Kg		72	50 - 120
2,4-Dimethylphenol	0.667	0.426		mg/Kg		64	24 - 120
2,4-Dinitrophenol	1.33	0.840		mg/Kg		63	19 - 132
2,4-Dinitrotoluene	0.667	0.551		mg/Kg		83	64 - 120
2,6-Dinitrotoluene	0.667	0.525		mg/Kg		79	62 - 120
2-Chloronaphthalene	0.667	0.496		mg/Kg		74	51 - 120
2-Chlorophenol	0.667	0.445		mg/Kg		67	47 - 120
2-Methylnaphthalene	0.667	0.457		mg/Kg		69	38 - 120
2-Methylphenol	0.667	0.470		mg/Kg		70	45 - 120
2-Nitroaniline	0.667	0.574		mg/Kg		86	57 - 120
2-Nitrophenol	0.667	0.476		mg/Kg		71	51 - 120
3,3'-Dichlorobenzidine	1.33	0.873		mg/Kg		65	27 - 199
3-Nitroaniline	0.667	0.478		mg/Kg		72	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.03		mg/Kg		77	46 - 126
4-Bromophenyl phenyl ether	0.667	0.528		mg/Kg		79	65 - 120
4-Chloro-3-methylphenol	0.667	0.513		mg/Kg		77	51 - 120
4-Chloroaniline	0.667	0.370		mg/Kg		55	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.506		mg/Kg		76	59 - 120
4-Nitroaniline	0.667	0.516		mg/Kg		77	48 - 128
4-Nitrophenol	1.33	1.15		mg/Kg		86	43 - 120
Acenaphthene	0.667	0.520		mg/Kg		78	52 - 120
Acenaphthylene	0.667	0.479		mg/Kg		72	52 - 120
Acetophenone	0.667	0.461		mg/Kg		69	47 - 120
Anthracene	0.667	0.537		mg/Kg		81	64 - 120
Atrazine	1.33	1.25		mg/Kg		93	71 - 125
Benzaldehyde	1.33	0.941		mg/Kg		71	42 - 120
Benzo[a]anthracene	0.667	0.564		mg/Kg		85	70 - 120
Benzo[a]pyrene	0.667	0.506		mg/Kg		76	63 - 125
Benzo[b]fluoranthene	0.667	0.546		mg/Kg		82	64 - 121
Benzo[g,h,i]perylene	0.667	0.496		mg/Kg		74	62 - 120
Benzo[k]fluoranthene	0.667	0.528		mg/Kg		79	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.475		mg/Kg		71	50 - 120
Bis(2-chloroethyl)ether	0.667	0.465		mg/Kg		70	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.603		mg/Kg		90	63 - 133
Butyl benzyl phthalate	0.667	0.604		mg/Kg		91	66 - 127
Caprolactam	1.33	1.11		mg/Kg		83	67 - 120
Carbazole	0.667	0.563		mg/Kg		84	61 - 129
Chrysene	0.667	0.549		mg/Kg		82	67 - 120
Dibenz(a,h)anthracene	0.667	0.495		mg/Kg		74	62 - 120
Dibenzofuran	0.667	0.505		mg/Kg		76	55 - 120
Diethyl phthalate	0.667	0.549		mg/Kg		82	61 - 120
Dimethyl phthalate	0.667	0.562		mg/Kg		84	64 - 120
Di-n-butyl phthalate	0.667	0.587		mg/Kg		88	70 - 129
Di-n-octyl phthalate	0.667	0.588		mg/Kg		88	64 - 129

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A
Matrix: Solid
Analysis Batch: 566020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	0.667	0.561		mg/Kg		84	71 - 124
Fluorene	0.667	0.522		mg/Kg		78	58 - 120
Hexachlorobenzene	0.667	0.498		mg/Kg		75	59 - 120
Hexachlorobutadiene	0.667	0.462		mg/Kg		69	45 - 120
Hexachlorocyclopentadiene	0.667	0.197	J	mg/Kg		30	10 - 120
Hexachloroethane	0.667	0.399		mg/Kg		60	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.515		mg/Kg		77	65 - 122
Isophorone	0.667	0.476		mg/Kg		71	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.465		mg/Kg		70	48 - 120
N-Nitrosodiphenylamine	0.667	0.526		mg/Kg		79	64 - 120
Naphthalene	0.667	0.463		mg/Kg		69	34 - 120
Nitrobenzene	0.667	0.479		mg/Kg		72	48 - 120
Pentachlorophenol	1.33	0.634		mg/Kg		48	10 - 120
Phenanthrene	0.667	0.530		mg/Kg		79	60 - 120
Phenol	0.667	0.485		mg/Kg		73	48 - 120
Pyrene	0.667	0.568		mg/Kg		85	67 - 120
3 & 4 Methylphenol	0.667	0.466		mg/Kg		70	49 - 120
2-Butoxyethanol	0.667	0.419		mg/Kg		63	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	96		46 - 137
Phenol-d5 (Surr)	76		26 - 120
Nitrobenzene-d5 (Surr)	74		25 - 120
2-Fluorophenol (Surr)	69		20 - 120
2-Fluorobiphenyl (Surr)	78		34 - 120
2,4,6-Tribromophenol (Surr)	65		10 - 120

Lab Sample ID: MB 240-565653/8-A
Matrix: Solid
Analysis Batch: 565910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/16/23 11:22	03/18/23 14:10	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/16/23 11:22	03/18/23 14:10	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/16/23 11:22	03/18/23 14:10	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/16/23 11:22	03/18/23 14:10	1
Pyridine	ND		0.0040	0.00036	mg/L		03/16/23 11:22	03/18/23 14:10	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/16/23 11:22	03/18/23 14:10	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/16/23 11:22	03/18/23 14:10	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/16/23 11:22	03/18/23 14:10	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/16/23 11:22	03/18/23 14:10	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/16/23 11:22	03/18/23 14:10	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/16/23 11:22	03/18/23 14:10	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/16/23 11:22	03/18/23 14:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	117		46 - 137	03/16/23 11:22	03/18/23 14:10	1
Phenol-d5 (Surr)	61		26 - 120	03/16/23 11:22	03/18/23 14:10	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-565653/8-A
Matrix: Solid
Analysis Batch: 565910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565653

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	67		24 - 120	03/16/23 11:22	03/18/23 14:10	1
2-Fluorophenol (Surr)	70		19 - 120	03/16/23 11:22	03/18/23 14:10	1
2-Fluorobiphenyl (Surr)	92		33 - 120	03/16/23 11:22	03/18/23 14:10	1
2,4,6-Tribromophenol (Surr)	73		10 - 120	03/16/23 11:22	03/18/23 14:10	1

Lab Sample ID: LCS 240-565653/9-A
Matrix: Solid
Analysis Batch: 565910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565653

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0555		mg/L		69	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0711		mg/L		89	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0687		mg/L		86	51 - 120
2,4-Dinitrotoluene	0.0800	0.0631		mg/L		79	58 - 125
Pyridine	0.160	0.0442		mg/L		28	10 - 120
2-Methylphenol	0.0800	0.0545		mg/L		68	45 - 120
Hexachlorobenzene	0.0800	0.0724		mg/L		91	55 - 120
Hexachlorobutadiene	0.0800	0.0606		mg/L		76	41 - 120
Hexachloroethane	0.0800	0.0511		mg/L		64	39 - 120
Nitrobenzene	0.0800	0.0549		mg/L		69	47 - 120
Pentachlorophenol	0.160	0.0993		mg/L		62	19 - 132
3 & 4 Methylphenol	0.0800	0.0567		mg/L		71	40 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	106		46 - 137
Phenol-d5 (Surr)	63		26 - 120
Nitrobenzene-d5 (Surr)	69		24 - 120
2-Fluorophenol (Surr)	70		19 - 120
2-Fluorobiphenyl (Surr)	91		33 - 120
2,4,6-Tribromophenol (Surr)	93		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-565654/6-A
Matrix: Solid
Analysis Batch: 565762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565654

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/16/23 11:26	03/17/23 11:11	1
Endrin	ND		0.00050	0.0000065	mg/L		03/16/23 11:26	03/17/23 11:11	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/16/23 11:26	03/17/23 11:11	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/16/23 11:26	03/17/23 11:11	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/16/23 11:26	03/17/23 11:11	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/16/23 11:26	03/17/23 11:11	1
Toxaphene	ND		0.020	0.000058	mg/L		03/16/23 11:26	03/17/23 11:11	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	72		10 - 145	03/16/23 11:26	03/17/23 11:11	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-565654/6-A
Matrix: Solid
Analysis Batch: 565762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565654

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	73		10 - 145	03/16/23 11:26	03/17/23 11:11	1
Tetrachloro-m-xylene	52		10 - 123	03/16/23 11:26	03/17/23 11:11	1
Tetrachloro-m-xylene	59		10 - 123	03/16/23 11:26	03/17/23 11:11	1

Lab Sample ID: LCS 240-565654/7-A
Matrix: Solid
Analysis Batch: 565762

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin	0.00100	0.000863		mg/L		86	36 - 120
Heptachlor	0.00100	0.000788		mg/L		79	29 - 120
Heptachlor epoxide	0.00100	0.000806		mg/L		81	36 - 120
gamma-BHC (Lindane)	0.00100	0.000792		mg/L		79	23 - 120
Methoxychlor	0.00100	0.00106		mg/L		106	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	74		10 - 145
DCB Decachlorobiphenyl	73		10 - 145
Tetrachloro-m-xylene	61		10 - 123
Tetrachloro-m-xylene	69		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-565605/1-A
Matrix: Solid
Analysis Batch: 565569

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565605

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1221	ND		50	30	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1232	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1242	ND		50	19	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1248	ND		50	17	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1254	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1260	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1262	ND		50	22	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1268	ND		50	16	ug/Kg		03/16/23 08:44	03/16/23 17:38	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	92		10 - 149	03/16/23 08:44	03/16/23 17:38	1
DCB Decachlorobiphenyl	76		10 - 174	03/16/23 08:44	03/16/23 17:38	1

Lab Sample ID: LCS 240-565605/2-A
Matrix: Solid
Analysis Batch: 565569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor-1016	1000	908		ug/Kg		91	28 - 140

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-565605/2-A
Matrix: Solid
Analysis Batch: 565569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1260	1000	906		ug/Kg		91	39 - 153

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	112		10 - 149
DCB Decachlorobiphenyl	97		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-355463/1-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 04:30	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 04:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136	03/20/23 19:00	03/21/23 04:30	1
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/20/23 19:00	03/21/23 04:30	1

Lab Sample ID: MB 410-355463/2-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 04:58	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 04:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	03/20/23 19:00	03/21/23 04:58	1
2,4-Dichlorophenylacetic acid (Surr)	68		26 - 136	03/20/23 19:00	03/21/23 04:58	1

Lab Sample ID: MB 410-355463/3-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355463

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 05:26	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 05:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/20/23 19:00	03/21/23 05:26	1
2,4-Dichlorophenylacetic acid (Surr)	67		26 - 136	03/20/23 19:00	03/21/23 05:26	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-355463/4-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355463

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00358	J	mg/L		72	58 - 148
2,4-D	0.0502	0.0373	J	mg/L		74	42 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-354736/1-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354736

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	0.109	J	5.0	0.011	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,6,7,8-HpCDF	0.0245	J	5.0	0.0017	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8-HxCDD	0.0330	J	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8-HxCDF	ND		5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8,9-HpCDF	0.0247	J	5.0	0.0024	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,6,7,8-HxCDD	0.0232	J	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,6,7,8-HxCDF	0.0121	J	5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8-PeCDD	0.0346	J	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8-PeCDF	0.0550	J	5.0	0.0075	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8,9-HxCDD	0.0272	J	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8,9-HxCDF	0.0470	J	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,4,6,7,8-HxCDF	0.0531	J	5.0	0.0030	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,4,7,8-PeCDF	0.0437	J	5.0	0.0055	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,7,8-TCDD	ND		1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,7,8-TCDF	0.00755	J	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
OCDD	0.270	J	10	0.0091	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
OCDF	0.0892	J	10	0.0024	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HxCDD	0.218	J	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HxCDF	0.135	J	5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HpCDD	0.109	J	5.0	0.011	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HpCDF	0.0493	J	5.0	0.0020	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total PeCDD	0.0997	J	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total PeCDF	0.115	J	5.0	0.0065	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total TCDD	0.0236	J	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total TCDF	0.0277	J	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	98		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-OCDD	99		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,7,8-TCDF	86		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,7,8-TCDD	86		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,4,7,8-PeCDF	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,4,6,7,8-HxCDF	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-354736/1-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354736

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,7,8,9-HxCDF	97		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8,9-HxCDD	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8-PeCDF	89		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8-PeCDD	85		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,6,7,8-HxCDF	100		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,6,7,8-HxCDD	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8,9-HpCDF	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8-HxCDF	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8-HxCDD	92		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,6,7,8-HpCDF	96		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,6,7,8-HpCDD	96		40 - 135	03/17/23 11:07	03/21/23 02:11	1

Lab Sample ID: LCS 410-354736/2-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354736

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,2,3,4,6,7,8-HpCDD	100	91.7		ng/Kg		92	77 - 127
1,2,3,4,6,7,8-HpCDF	100	89.4		ng/Kg		89	77 - 127
1,2,3,4,7,8-HxCDD	100	97.2		ng/Kg		97	77 - 127
1,2,3,4,7,8-HxCDF	100	95.3		ng/Kg		95	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.7		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	97.3		ng/Kg		97	76 - 127
1,2,3,6,7,8-HxCDF	100	93.1		ng/Kg		93	77 - 129
1,2,3,7,8-PeCDD	100	102		ng/Kg		102	77 - 127
1,2,3,7,8-PeCDF	100	97.8		ng/Kg		98	75 - 129
1,2,3,7,8,9-HxCDD	100	99.3		ng/Kg		99	76 - 127
1,2,3,7,8,9-HxCDF	100	94.2		ng/Kg		94	76 - 126
2,3,4,6,7,8-HxCDF	100	93.0		ng/Kg		93	78 - 128
2,3,4,7,8-PeCDF	100	98.4		ng/Kg		98	75 - 131
2,3,7,8-TCDD	20.0	18.4		ng/Kg		92	68 - 142
2,3,7,8-TCDF	20.0	19.3		ng/Kg		96	70 - 133
OCDD	200	189		ng/Kg		95	77 - 125
OCDF	200	188		ng/Kg		94	75 - 128

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-OCDF	85		40 - 135
13C-OCDD	87		40 - 135
13C-2,3,7,8-TCDF	79		40 - 135
13C-2,3,7,8-TCDD	78		40 - 135
13C-2,3,4,7,8-PeCDF	85		40 - 135
13C-2,3,4,6,7,8-HxCDF	84		40 - 135
13C-1,2,3,7,8,9-HxCDF	83		40 - 135
13C-1,2,3,7,8,9-HxCDD	84		40 - 135
13C-1,2,3,7,8-PeCDF	81		40 - 135
13C-1,2,3,7,8-PeCDD	78		40 - 135
13C-1,2,3,6,7,8-HxCDF	88		40 - 135
13C-1,2,3,6,7,8-HxCDD	82		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	82		40 - 135

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-354736/2-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354736

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	85		40 - 135
13C-1,2,3,4,7,8-HxCDD	81		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	85		40 - 135

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-565630/2-A
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:01	1
Barium	ND		0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:01	1
Cadmium	ND		0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:01	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:01	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:01	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:01	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:01	1

Lab Sample ID: LCS 240-565630/3-A
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.09		mg/L		105	50 - 150
Barium	2.00	1.93		mg/L		97	50 - 150
Cadmium	1.00	1.03		mg/L		103	50 - 150
Chromium	1.00	0.950		mg/L		95	50 - 150
Lead	1.00	0.951		mg/L		95	50 - 150
Selenium	2.00	2.10		mg/L		105	50 - 150
Silver	0.100	0.101		mg/L		101	50 - 150

Lab Sample ID: LB 240-565526/1-B
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565630

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00596	J	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 18:57	1
Barium	0.00179	J	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 18:57	1
Cadmium	ND		0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 18:57	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 18:57	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 18:57	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 18:57	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 18:57	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-181894-1 MS
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: WC-S. TRK-WEST-01 (2-4)
Prep Type: TCLP
Prep Batch: 565630

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Arsenic	0.010	J B	5.00	5.09		mg/L		102		75 - 125
Barium	0.47	J B	50.0	48.2		mg/L		95		75 - 125
Cadmium	0.0012	J	1.00	1.00		mg/L		100		75 - 125
Chromium	ND		5.00	4.78		mg/L		96		75 - 125
Lead	ND		5.00	4.84		mg/L		97		75 - 125
Selenium	ND		1.00	1.02		mg/L		102		75 - 125
Silver	ND		1.00	0.977		mg/L		98		75 - 125

Lab Sample ID: 240-181894-1 MSD
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: WC-S. TRK-WEST-01 (2-4)
Prep Type: TCLP
Prep Batch: 565630

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Arsenic	0.010	J B	5.00	5.20		mg/L		104		75 - 125	2	20
Barium	0.47	J B	50.0	48.0		mg/L		95		75 - 125	0	20
Cadmium	0.0012	J	1.00	1.02		mg/L		101		75 - 125	1	20
Chromium	ND		5.00	4.82		mg/L		96		75 - 125	1	20
Lead	ND		5.00	4.89		mg/L		98		75 - 125	1	20
Selenium	ND		1.00	1.03		mg/L		103		75 - 125	1	20
Silver	ND		1.00	0.979		mg/L		98		75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-565632/2-A
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565632

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:25	1

Lab Sample ID: LCS 240-565632/3-A
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565632

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	Limits
Mercury	0.00500	0.00518		mg/L		104		80 - 120

Lab Sample ID: LB 240-565526/1-C
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565632

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:23	1

Lab Sample ID: 240-181894-1 MS
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: WC-S. TRK-WEST-01 (2-4)
Prep Type: TCLP
Prep Batch: 565632

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Mercury	ND		0.00500	0.00541		mg/L		108		80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 240-181894-1 MSD
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: WC-S. TRK-WEST-01 (2-4)
Prep Type: TCLP
Prep Batch: 565632

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits	Limit	
Mercury	ND		0.00500	0.00554		mg/L		111	80 - 120	2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-181894-5 DU
Matrix: Solid
Analysis Batch: 565507

Client Sample ID: WC-S. TRK-WEST-05 (4-6)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit	
Percent Solids	80.7		78.1		%		3	20	
Percent Moisture	19.3		21.9		%		13	20	

Lab Sample ID: 240-181894-15 DU
Matrix: Solid
Analysis Batch: 565507

Client Sample ID: WC-S. TRK-WEST-14 (14-16)
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit	
Percent Solids	77.5		77.4		%		0.3	20	
Percent Moisture	22.5		22.6		%		0.9	20	

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS VOA

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	Composite	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Prep Batch: 565503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	5035	
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	5035	
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Total/NA	Solid	5035	
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	5035	
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	5035	
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Total/NA	Solid	5035	
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	5035	
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	5035	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	5035	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	5035	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	5035	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	5035	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	5035	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	
MB 240-565503/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	

Leach Batch: 565528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	1311	565478
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478
LB 240-565528/1-A MB	Method Blank	TCLP	Solid	1311	
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Analysis Batch: 565699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	8260D	565503
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	8260D	565503
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Total/NA	Solid	8260D	565503
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	8260D	565503
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Total/NA	Solid	8260D	565503
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	8260D	565503
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	8260D	565503
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
MB 240-565503/1-A	Method Blank	Total/NA	Solid	8260D	565503
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	8260D	565503
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS VOA

Analysis Batch: 565727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	8260D	565503
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	8260D	565503
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	8260D	565503
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	8260D	565503
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8260D	565503
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8260D	565503
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8260D	565503
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
MB 240-565503/1-A	Method Blank	Total/NA	Solid	8260D	565503
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	8260D	565503
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503

Analysis Batch: 565827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	8260D	565528
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528
LB 240-565528/1-A MB	Method Blank	TCLP	Solid	8260D	565528
LCS 240-565827/10	Lab Control Sample	Total/NA	Solid	8260D	
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528

Analysis Batch: 565878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	8260D	565503
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	8260D	565503
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8260D	565503
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8260D	565503
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8260D	565503
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8260D	565503

Analysis Batch: 565888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	8260D	565503

GC/MS Semi VOA

Prep Batch: 565464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	3540C	
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	3540C	
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Total/NA	Solid	3540C	
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	3540C	
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	3540C	
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Total/NA	Solid	3540C	
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	3540C	
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	3540C	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	3540C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS Semi VOA (Continued)

Prep Batch: 565464 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	3540C	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	3540C	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	3540C	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	3540C	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	3540C	
MB 240-565464/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	3540C	

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	Composite	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Leach Batch: 565516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	1311	565478
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Prep Batch: 565653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	3510C	565516
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	3510C	565516
MB 240-565653/8-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-565653/9-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 565783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	8270E	565464
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	8270E	565464
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Total/NA	Solid	8270E	565464
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	8270E	565464
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	8270E	565464
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Total/NA	Solid	8270E	565464
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	8270E	565464
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8270E	565464
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8270E	565464
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	8270E	565464
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8270E	565464
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8270E	565464
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8270E	565464
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8270E	565464
MB 240-565464/1-A	Method Blank	Total/NA	Solid	8270E	565464

Analysis Batch: 565910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	8270E	565653
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8270E	565653
MB 240-565653/8-A	Method Blank	Total/NA	Solid	8270E	565653
LCS 240-565653/9-A	Lab Control Sample	Total/NA	Solid	8270E	565653

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS Semi VOA

Analysis Batch: 566020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	8270E	565464

GC Semi VOA

Leach Batch: 354756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	1311	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	

Prep Batch: 355463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	8151A	354756
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8151A	354756
MB 410-355463/1-A	Method Blank	Total/NA	Solid	8151A	
MB 410-355463/2-A	Method Blank	Total/NA	Solid	8151A	
MB 410-355463/3-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-355463/4-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 355545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	8151A	355463
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8151A	355463
MB 410-355463/1-A	Method Blank	Total/NA	Solid	8151A	355463
MB 410-355463/2-A	Method Blank	Total/NA	Solid	8151A	355463
MB 410-355463/3-A	Method Blank	Total/NA	Solid	8151A	355463
LCS 410-355463/4-A	Lab Control Sample	Total/NA	Solid	8151A	355463

Composite Batch: 565477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	Composite	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Composite	

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	Composite	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Leach Batch: 565516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	1311	565478
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Analysis Batch: 565569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	8082A	565605
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	8082A	565605
MB 240-565605/1-A	Method Blank	Total/NA	Solid	8082A	565605
LCS 240-565605/2-A	Lab Control Sample	Total/NA	Solid	8082A	565605

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

GC Semi VOA

Prep Batch: 565605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	3546	565477
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	3546	565477
MB 240-565605/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-565605/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 565654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	3510C	565516
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	3510C	565516
MB 240-565654/6-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-565654/7-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 565762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	TCLP	Solid	8081B	565654
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8081B	565654
MB 240-565654/6-A	Method Blank	Total/NA	Solid	8081B	565654
LCS 240-565654/7-A	Lab Control Sample	Total/NA	Solid	8081B	565654

Specialty Organics

Prep Batch: 354736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-354736/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-354736/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 355523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	8290A	354736
MB 410-354736/1-A	Method Blank	Total/NA	Solid	8290A	354736
LCS 410-354736/2-A	Lab Control Sample	Total/NA	Solid	8290A	354736

Metals

Leach Batch: 565526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	1311	
240-181894-2	WC-S. TRK-WEST-02 (6-8)	TCLP	Solid	1311	
240-181894-3	WC-S. TRK-WEST-03 (2-4)	TCLP	Solid	1311	
240-181894-4	WC-S. TRK-WEST-04 (4-6)	TCLP	Solid	1311	
240-181894-5	WC-S. TRK-WEST-05 (4-6)	TCLP	Solid	1311	
240-181894-6	WC-S. TRK-WEST-06 (6-8)	TCLP	Solid	1311	
240-181894-7	WC-S. TRK-WEST-07 (8-10)	TCLP	Solid	1311	
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	1311	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	1311	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	1311	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	1311	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	1311	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	1311	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	1311	
LB 240-565526/1-B	Method Blank	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Metals (Continued)

Leach Batch: 565526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-565526/1-C	Method Blank	TCLP	Solid	1311	
240-181894-1 MS	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	1311	
240-181894-1 MSD	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	1311	

Prep Batch: 565630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	3010A	565526
240-181894-2	WC-S. TRK-WEST-02 (6-8)	TCLP	Solid	3010A	565526
240-181894-3	WC-S. TRK-WEST-03 (2-4)	TCLP	Solid	3010A	565526
240-181894-4	WC-S. TRK-WEST-04 (4-6)	TCLP	Solid	3010A	565526
240-181894-5	WC-S. TRK-WEST-05 (4-6)	TCLP	Solid	3010A	565526
240-181894-6	WC-S. TRK-WEST-06 (6-8)	TCLP	Solid	3010A	565526
240-181894-7	WC-S. TRK-WEST-07 (8-10)	TCLP	Solid	3010A	565526
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	3010A	565526
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	3010A	565526
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	3010A	565526
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	3010A	565526
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	3010A	565526
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	3010A	565526
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	3010A	565526
LB 240-565526/1-B	Method Blank	TCLP	Solid	3010A	565526
MB 240-565630/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-565630/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-181894-1 MS	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	3010A	565526
240-181894-1 MSD	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	3010A	565526

Prep Batch: 565632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565526
240-181894-2	WC-S. TRK-WEST-02 (6-8)	TCLP	Solid	7470A	565526
240-181894-3	WC-S. TRK-WEST-03 (2-4)	TCLP	Solid	7470A	565526
240-181894-4	WC-S. TRK-WEST-04 (4-6)	TCLP	Solid	7470A	565526
240-181894-5	WC-S. TRK-WEST-05 (4-6)	TCLP	Solid	7470A	565526
240-181894-6	WC-S. TRK-WEST-06 (6-8)	TCLP	Solid	7470A	565526
240-181894-7	WC-S. TRK-WEST-07 (8-10)	TCLP	Solid	7470A	565526
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	7470A	565526
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	7470A	565526
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	7470A	565526
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	7470A	565526
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	7470A	565526
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	7470A	565526
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	7470A	565526
LB 240-565526/1-C	Method Blank	TCLP	Solid	7470A	565526
MB 240-565632/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-565632/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-181894-1 MS	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565526
240-181894-1 MSD	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565526

Analysis Batch: 565882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	6010D	565630

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Metals (Continued)

Analysis Batch: 565882 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-2	WC-S. TRK-WEST-02 (6-8)	TCLP	Solid	6010D	565630
240-181894-3	WC-S. TRK-WEST-03 (2-4)	TCLP	Solid	6010D	565630
240-181894-4	WC-S. TRK-WEST-04 (4-6)	TCLP	Solid	6010D	565630
240-181894-5	WC-S. TRK-WEST-05 (4-6)	TCLP	Solid	6010D	565630
240-181894-6	WC-S. TRK-WEST-06 (6-8)	TCLP	Solid	6010D	565630
240-181894-7	WC-S. TRK-WEST-07 (8-10)	TCLP	Solid	6010D	565630
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	6010D	565630
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	6010D	565630
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	6010D	565630
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	6010D	565630
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	6010D	565630
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	6010D	565630
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	6010D	565630
LB 240-565526/1-B	Method Blank	TCLP	Solid	6010D	565630
MB 240-565630/2-A	Method Blank	Total/NA	Solid	6010D	565630
LCS 240-565630/3-A	Lab Control Sample	Total/NA	Solid	6010D	565630
240-181894-1 MS	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	6010D	565630
240-181894-1 MSD	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	6010D	565630

Analysis Batch: 566117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565632
240-181894-2	WC-S. TRK-WEST-02 (6-8)	TCLP	Solid	7470A	565632
240-181894-3	WC-S. TRK-WEST-03 (2-4)	TCLP	Solid	7470A	565632
240-181894-4	WC-S. TRK-WEST-04 (4-6)	TCLP	Solid	7470A	565632
240-181894-5	WC-S. TRK-WEST-05 (4-6)	TCLP	Solid	7470A	565632
240-181894-6	WC-S. TRK-WEST-06 (6-8)	TCLP	Solid	7470A	565632
240-181894-7	WC-S. TRK-WEST-07 (8-10)	TCLP	Solid	7470A	565632
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	7470A	565632
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	7470A	565632
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	7470A	565632
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	7470A	565632
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	7470A	565632
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	7470A	565632
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	7470A	565632
LB 240-565526/1-C	Method Blank	TCLP	Solid	7470A	565632
MB 240-565632/2-A	Method Blank	Total/NA	Solid	7470A	565632
LCS 240-565632/3-A	Lab Control Sample	Total/NA	Solid	7470A	565632
240-181894-1 MS	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565632
240-181894-1 MSD	WC-S. TRK-WEST-01 (2-4)	TCLP	Solid	7470A	565632

General Chemistry

Composite Batch: 565477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	Composite	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Composite	

Analysis Batch: 565507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-1	WC-S. TRK-WEST-01 (2-4)	Total/NA	Solid	Moisture	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

General Chemistry (Continued)

Analysis Batch: 565507 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-2	WC-S. TRK-WEST-02 (6-8)	Total/NA	Solid	Moisture	
240-181894-3	WC-S. TRK-WEST-03 (2-4)	Total/NA	Solid	Moisture	
240-181894-4	WC-S. TRK-WEST-04 (4-6)	Total/NA	Solid	Moisture	
240-181894-5	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	Moisture	
240-181894-6	WC-S. TRK-WEST-06 (6-8)	Total/NA	Solid	Moisture	
240-181894-7	WC-S. TRK-WEST-07 (8-10)	Total/NA	Solid	Moisture	
240-181894-8	WC-S. TRK-WEST-COMP (01-07)	Total/NA	Solid	Moisture	565477
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	Moisture	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	Moisture	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	Moisture	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	Moisture	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	Moisture	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	Moisture	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	Moisture	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Moisture	565477
240-181894-5 DU	WC-S. TRK-WEST-05 (4-6)	Total/NA	Solid	Moisture	
240-181894-15 DU	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	Moisture	

Preliminary Data

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:10
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:29
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-01 (2-4)

Lab Sample ID: 240-181894-1

Date Collected: 03/14/23 10:44

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 10:07
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		66.6666	565699	CS	EET CAN	03/16/23 20:50
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		10	565783	JMG	EET CAN	03/17/23 19:37

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:40
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:42
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-02 (6-8)

Lab Sample ID: 240-181894-2

Date Collected: 03/14/23 11:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 08:08
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		2	565699	CS	EET CAN	03/17/23 03:09
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		2.5	565878	CS	EET CAN	03/17/23 22:18
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		10	565783	JMG	EET CAN	03/17/23 20:02

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:45
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:44
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-03 (2-4)

Lab Sample ID: 240-181894-3

Date Collected: 03/14/23 11:45

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565699	CS	EET CAN	03/16/23 21:16
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		5	565783	JMG	EET CAN	03/17/23 15:08

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:49
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:46
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-04 (4-6)

Lab Sample ID: 240-181894-4

Date Collected: 03/14/23 12:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 08:32
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		4	565878	CS	EET CAN	03/17/23 21:48
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		10	565783	JMG	EET CAN	03/17/23 20:26

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:54
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:48
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-05 (4-6)

Lab Sample ID: 240-181894-5

Date Collected: 03/14/23 12:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565699	CS	EET CAN	03/16/23 22:06
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		4	565783	JMG	EET CAN	03/17/23 16:22

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 19:58
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:50
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-06 (6-8)

Lab Sample ID: 240-181894-6

Date Collected: 03/14/23 12:50

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565699	CS	EET CAN	03/16/23 22:31
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		1	565783	JMG	EET CAN	03/17/23 14:44

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:03
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:52
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-07 (8-10)

Lab Sample ID: 240-181894-7

Date Collected: 03/14/23 13:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 10:55
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		50	565699	CS	EET CAN	03/16/23 22:56
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		100	565888	TJL2	EET CAN	03/18/23 06:32
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		50	565783	JMG	EET CAN	03/17/23 17:35

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565528	DRJ	EET CAN	03/15/23 15:00 - 03/16/23 08:20 ¹
TCLP	Analysis	8260D		1	565827	AJS	EET CAN	03/17/23 15:32
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565653	SDE	EET CAN	03/16/23 11:22
TCLP	Analysis	8270E		1	565910	MRU	EET CAN	03/18/23 15:39
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565654	SDE	EET CAN	03/16/23 11:26
TCLP	Analysis	8081B		1	565762	BPM	EET CAN	03/17/23 11:42
TCLP	Leach	1311			354756	N3PD	ELLE	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	8151A			355463	K2IL	ELLE	03/20/23 19:00
TCLP	Analysis	8151A		1	355545	UAMZ	ELLE	03/21/23 06:22
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 14:34

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (01-07)

Lab Sample ID: 240-181894-8

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Prep	3546			565605	AJ	EET CAN	03/16/23 08:44
Total/NA	Analysis	8082A		1	565569	LSH	EET CAN	03/16/23 18:40
Total/NA	Prep	HRMS-Soxtherm			354736	UJSZ	ELLE	03/17/23 11:07
Total/NA	Analysis	8290A		1	355523	DZ6A	ELLE	03/21/23 07:02

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:08
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:54
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 08:55
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		5.26315 789	565878	CS	EET CAN	03/17/23 20:32
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 18:24

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:12
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:56
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 07:44
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		5	565699	CS	EET CAN	03/16/23 23:47
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		10	565878	CS	EET CAN	03/17/23 20:57
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 18:49

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:17
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:03
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565699	CS	EET CAN	03/17/23 00:12
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		100	565783	JMG	EET CAN	03/17/23 16:46

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:22
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:05
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 09:19
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		8.3333	565878	CS	EET CAN	03/17/23 20:07
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		5	565783	JMG	EET CAN	03/17/23 15:33

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:35
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:07
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 11:43
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		16.6666	565878	CS	EET CAN	03/17/23 19:42
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		20	565783	JMG	EET CAN	03/17/23 18:00

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:39
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:09
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 12:31
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		16.6666	565878	CS	EET CAN	03/17/23 18:16
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 19:13

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:44
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:11
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 13:19
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		100	565699	CS	EET CAN	03/17/23 01:53
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		100	565783	JMG	EET CAN	03/17/23 17:11

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565528	DRJ	EET CAN	03/15/23 15:00 - 03/16/23 08:20 ¹
TCLP	Analysis	8260D		1	565827	AJS	EET CAN	03/17/23 15:56
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565653	SDE	EET CAN	03/16/23 11:22
TCLP	Analysis	8270E		1	565910	MRU	EET CAN	03/18/23 16:01

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565654	SDE	EET CAN	03/16/23 11:26
TCLP	Analysis	8081B		1	565762	BPM	EET CAN	03/17/23 11:58
TCLP	Leach	1311			354756	N3PD	ELLE	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	8151A			355463	K2IL	ELLE	03/20/23 19:00
TCLP	Analysis	8151A		1	355545	UAMZ	ELLE	03/21/23 06:50
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 14:34

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Prep	3546			565605	AJ	EET CAN	03/16/23 08:44
Total/NA	Analysis	8082A		1	565569	LSH	EET CAN	03/16/23 18:56

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

Address: ELYD*IN

Chain of Custody Record

645685



Environment Testing America

TAL-8210

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact: ASCADIS Project Manager: Michelle Clayton Site Contact: Mike DeMunn Date: 02/14/23 of 2 COCs

Company Name: ASCADIS Lab Contact: Mike DeMunn Carrier: DAVID LOEWEN Sampler: DAVID LOEWEN

Address: 55 MIDWINTER (VTLR) SR 200 For Lab Use Only: _____

City/State/Zip: INDIANAPOLIS IN 46203 Walk-in Client: _____

Phone: _____ Lab Sampling: _____

Fax: _____ Job / SDG No.: _____

Project Name: NOYKOK JOHN HERN Sample Specific Notes: _____

Site: E. PALETTINE OH

P O # _____

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time		Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Total VOC	Total SVOC	Total Metals	ICLR VOC	ICLR SVOC	ICLR PEST	ICLR HERB	DIOXINS/FURANS-GRAB	TOTAL PCBs	
						CALENDAR DAYS	WORKING DAYS												
WC-S-TYK-WEST-D1(2-4)	3/14/23	1044	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D2(6-8)	3/14/23	1115	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D3(2-4)	3/14/23	1145	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D4(4-6)	3/14/23	1200	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D5(4-8)	3/14/23	1215	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D6(6-8)	3/14/23	1290	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D7(8-10)	3/14/23	1310	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-COMP(01-07)	3/14/23	---	LAB COMP	S	X			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D8(8-10)	3/14/23	1415	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D9(10-12)	3/14/23	1435	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D10(10-12)	3/14/23	1530	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X
WC-S-TYK-WEST-D11(12-14)	3/14/23	1551	G	S	9			N	N	X	X	X	X	X	X	X	X	X	X



240-181894 Chain of Custody

LAB TO GENERATE CERTIFICATE

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. NOX, BUTYL ACRYLATE

Special Instructions/QC Requirements & Comments: LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 7 GRAB SAMPLES

Relinquished by: David Loewen Date/Time: 3/14/23 17:40

Relinquished by: David Loewen Date/Time: 3/14/23 19:20

Eurofins - Canton Sample Receipt Form/Narrative Login #: 181894
Barberton Facility

Client Acadus Site Name NSRR-ER Cooler unpacked by: Jul
Cooler Received on 3-14-23 Opened on 3-14-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EL Foam Box _____ Client Cooler _____ Box _____ Other _____
Packing material used: Bubble Wrap _____ Foam Plastic Bag None _____ Other _____
COOLANT: Wet Ice Blue Ice _____ Dry Ice _____ Water _____ None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181894-1

Login Number: 181894

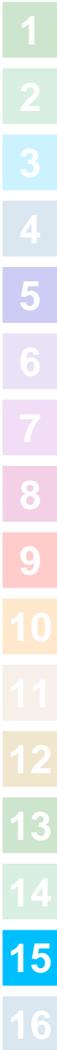
List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 03/16/23 09:53 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



PROHIBITORY DATA

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181894-1

Login Number: 181894

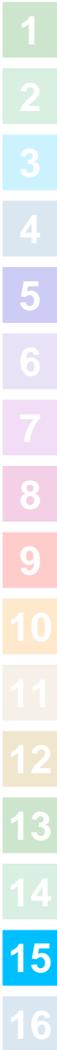
List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 3

List Creation: 03/17/23 02:47 PM

Creator: Foreman, Leah M

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



PROHIBITORY DATA

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	90	95	84	84	93	78	77	88
LCS 410-354736/2-A	Lab Control Sample	85	87	79	78	85	84	83	84
MB 410-354736/1-A	Method Blank	98	99	86	86	93	94	97	94

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	91	87	84	86	83	79	79	79
LCS 410-354736/2-A	Lab Control Sample	81	78	88	82	82	85	81	84
MB 410-354736/1-A	Method Blank	89	85	100	93	94	93	92	96

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-181894-8	WC-S. TRK-WEST-COMP (01-0	85
LCS 410-354736/2-A	Lab Control Sample	85
MB 410-354736/1-A	Method Blank	96

Surrogate Legend

OCDF = 13C-OCDF
 OCDD = 13C-OCDD
 TCDF = 13C-2,3,7,8-TCDF
 TCDD = 13C-2,3,7,8-TCDD
 PeCF = 13C-2,3,4,7,8-PeCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/23/2023 6:23:50 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181894-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/23/2023 6:23:50 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	15
Surrogate Summary	46
QC Sample Results	49
QC Association Summary	67
Lab Chronicle	73
Certification Summary	78
Chain of Custody	80
Receipt Checklists	86
Isotope Dilution Summary	88

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Job ID: 240-181894-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181894-1

Receipt

The samples were received on 3/14/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.5°C, 3.8°C and 4.0°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-565827 was outside the method criteria for the following analyte: Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8260D: The following sample(s) were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-S. TRK-WEST-08 (8-10) (240-181894-9), WC-S. TRK-WEST-09 (10-12) (240-181894-10), WC-S. TRK-WEST-10 (10-12) (240-181894-11), WC-S. TRK-WEST-11 (12-14) (240-181894-12), WC-S. TRK-WEST-12 (12-14) (240-181894-13), WC-S. TRK-WEST-13 (14-16) (240-181894-14), WC-S. TRK-WEST-14 (14-16) (240-181894-15), (240-181894-C-15 MS) and (240-181894-C-15 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-565699 recovered above the upper control limit for Bromomethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The MS/MSD for preparation batch 240-565503 and analytical batch 240-565878 is not reported because it was analyzed in another batch.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-565878 recovered above the upper control limit for Bromomethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-565910 recovered outside acceptance criteria, low biased, for Pentachlorophenol. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for the analyte, the data are reported. The following samples were impacted: WC-S. TRK-WEST-COMP (08-14) (240-181894-16) and (240-181902-A-1-J).

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-S. TRK-WEST-08 (8-10) (240-181894-9), WC-S. TRK-WEST-09 (10-12) (240-181894-10), WC-S. TRK-WEST-10 (10-12) (240-181894-11), WC-S. TRK-WEST-11 (12-14) (240-181894-12), WC-S. TRK-WEST-12 (12-14) (240-181894-13), WC-S. TRK-WEST-13 (14-16) (240-181894-14) and WC-S. TRK-WEST-14 (14-16) (240-181894-15). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Herbicides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-S. TRK-WEST-COMP (08-14) (240-181894-16).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Job ID: 240-181894-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Pesticides

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

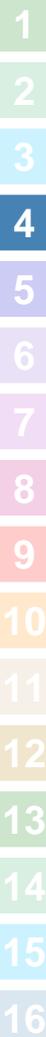
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Method Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Solid	03/14/23 14:15	03/14/23 19:20
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Solid	03/14/23 14:35	03/14/23 19:20
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Solid	03/14/23 15:30	03/14/23 19:20
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Solid	03/14/23 15:51	03/14/23 19:20
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Solid	03/14/23 15:51	03/14/23 19:20
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Solid	03/14/23 16:10	03/14/23 19:20
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Solid	03/14/23 16:30	03/14/23 19:20
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Solid	03/14/23 00:00	03/14/23 19:20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.084	J	0.40	0.076	mg/Kg	1	✖	8260D	Total/NA
Isopropylbenzene	0.098	J	0.40	0.061	mg/Kg	1	✖	8260D	Total/NA
Methyl acetate	0.38	J	2.0	0.27	mg/Kg	1	✖	8260D	Total/NA
Methylcyclohexane	0.91		0.80	0.11	mg/Kg	1	✖	8260D	Total/NA
Xylenes, Total	0.80		0.80	0.15	mg/Kg	1	✖	8260D	Total/NA
Butyl acrylate	25		21	11	mg/Kg	5.26315	✖	8260D	Total/NA
						789			
2-Ethylhexyl acrylate	98		21	16	mg/Kg	5.26315	✖	8260D	Total/NA
						789			
1,1'-Biphenyl	0.072	J	0.16	0.054	mg/Kg	2.5	✖	8270E	Total/NA
2-Methylnaphthalene	0.68		0.048	0.0062	mg/Kg	2.5	✖	8270E	Total/NA
Acenaphthene	0.16		0.048	0.0091	mg/Kg	2.5	✖	8270E	Total/NA
Acenaphthylene	0.18		0.048	0.013	mg/Kg	2.5	✖	8270E	Total/NA
Anthracene	0.39		0.048	0.0076	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[a]anthracene	0.98		0.048	0.011	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[a]pyrene	0.67		0.048	0.030	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[b]fluoranthene	1.5		0.048	0.021	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[g,h,i]perylene	0.43		0.048	0.022	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[k]fluoranthene	0.45		0.048	0.022	mg/Kg	2.5	✖	8270E	Total/NA
Carbazole	0.15	J	0.16	0.060	mg/Kg	2.5	✖	8270E	Total/NA
Chrysene	1.3		0.048	0.0047	mg/Kg	2.5	✖	8270E	Total/NA
Dibenz(a,h)anthracene	0.13		0.048	0.022	mg/Kg	2.5	✖	8270E	Total/NA
Dibenzofuran	0.31		0.16	0.041	mg/Kg	2.5	✖	8270E	Total/NA
Fluoranthene	1.7		0.048	0.014	mg/Kg	2.5	✖	8270E	Total/NA
Fluorene	0.17		0.048	0.0087	mg/Kg	2.5	✖	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.42		0.048	0.023	mg/Kg	2.5	✖	8270E	Total/NA
Naphthalene	0.41		0.048	0.0076	mg/Kg	2.5	✖	8270E	Total/NA
Phenanthrene	1.1		0.048	0.0071	mg/Kg	2.5	✖	8270E	Total/NA
Pyrene	1.7		0.048	0.0068	mg/Kg	2.5	✖	8270E	Total/NA
2-Butoxyethanol	2.4		0.22	0.21	mg/Kg	2.5	✖	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.60	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	0.055	J	0.34	0.052	mg/Kg	1	✖	8260D	Total/NA
Methylcyclohexane	0.69		0.69	0.091	mg/Kg	1	✖	8260D	Total/NA
Xylenes, Total	0.42	J	0.69	0.13	mg/Kg	1	✖	8260D	Total/NA
Butyl acrylate	41		17	9.3	mg/Kg	5	✖	8260D	Total/NA
2-Ethylhexyl acrylate	99		34	26	mg/Kg	10	✖	8260D	Total/NA
1,1'-Biphenyl	0.074	J	0.15	0.052	mg/Kg	2.5	✖	8270E	Total/NA
2-Methylnaphthalene	0.55		0.046	0.0060	mg/Kg	2.5	✖	8270E	Total/NA
Acenaphthene	0.11		0.046	0.0088	mg/Kg	2.5	✖	8270E	Total/NA
Acenaphthylene	0.10		0.046	0.012	mg/Kg	2.5	✖	8270E	Total/NA
Anthracene	0.28		0.046	0.0074	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[a]anthracene	0.83		0.046	0.010	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[a]pyrene	0.55		0.046	0.029	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[b]fluoranthene	1.0		0.046	0.020	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[g,h,i]perylene	0.31		0.046	0.022	mg/Kg	2.5	✖	8270E	Total/NA
Benzo[k]fluoranthene	0.41		0.046	0.021	mg/Kg	2.5	✖	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12) (Continued)

Lab Sample ID: 240-181894-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbazole	0.15		0.15	0.058	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	1.1		0.046	0.0046	mg/Kg	2.5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.092		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.30		0.15	0.040	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	1.7		0.046	0.014	mg/Kg	2.5	✳	8270E	Total/NA
Fluorene	0.17		0.046	0.0084	mg/Kg	2.5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.27		0.046	0.023	mg/Kg	2.5	✳	8270E	Total/NA
Naphthalene	0.35		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Phenanthrene	1.0		0.046	0.0069	mg/Kg	2.5	✳	8270E	Total/NA
Pyrene	1.6		0.046	0.0066	mg/Kg	2.5	✳	8270E	Total/NA
2-Butoxyethanol	2.5		0.22	0.20	mg/Kg	2.5	✳	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.50	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.26	J	0.68	0.22	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.058	J	0.34	0.052	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.99		0.68	0.090	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.52	J	0.68	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	3.3	J	3.4	1.8	mg/Kg	1	✳	8260D	Total/NA
2-Ethylhexyl acrylate	11		3.4	2.5	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	1.0	J	1.8	0.24	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	1.1	J	1.8	0.55	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	0.91	J	1.8	0.27	mg/Kg	100	✳	8270E	Total/NA
Pyrene	1.0	J	1.8	0.26	mg/Kg	100	✳	8270E	Total/NA
2-Butoxyethanol	130		8.6	8.1	mg/Kg	100	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.36	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	0.62	J	0.73	0.097	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.24	J	0.37	0.18	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.41	J	0.73	0.13	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	40		31	17	mg/Kg	8.3333	✳	8260D	Total/NA
2-Ethylhexyl acrylate	130		31	23	mg/Kg	8.3333	✳	8260D	Total/NA
2-Methylnaphthalene	0.76		0.096	0.013	mg/Kg	5	✳	8270E	Total/NA
Acenaphthene	0.074	J	0.096	0.018	mg/Kg	5	✳	8270E	Total/NA
Acenaphthylene	0.12		0.096	0.026	mg/Kg	5	✳	8270E	Total/NA
Anthracene	0.17		0.096	0.015	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]anthracene	0.40		0.096	0.022	mg/Kg	5	✳	8270E	Total/NA
Benzo[a]pyrene	0.35		0.096	0.060	mg/Kg	5	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.82		0.096	0.042	mg/Kg	5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.26		0.096	0.046	mg/Kg	5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.21		0.096	0.045	mg/Kg	5	✳	8270E	Total/NA
Chrysene	0.63		0.096	0.0096	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	0.28	J	0.32	0.084	mg/Kg	5	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14) (Continued)

Lab Sample ID: 240-181894-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	0.69		0.096	0.029	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.079	J	0.096	0.018	mg/Kg	5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.25		0.096	0.047	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.49		0.096	0.015	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.71		0.096	0.014	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.68		0.096	0.014	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	5.0		0.45	0.42	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.012	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.86	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.12	J	0.29	0.049	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.62	J	1.5	0.20	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.28	J	0.58	0.077	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	2.2		0.29	0.14	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.19	J	0.58	0.11	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	67		49	26	mg/Kg	16.6666	✳	8260D	Total/NA
2-Ethylhexyl acrylate	190		49	36	mg/Kg	16.6666	✳	8260D	Total/NA
2-Methylnaphthalene	0.41		0.37	0.049	mg/Kg	20	✳	8270E	Total/NA
Acenaphthylene	0.11	J	0.37	0.10	mg/Kg	20	✳	8270E	Total/NA
Anthracene	0.28	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]anthracene	1.4		0.37	0.085	mg/Kg	20	✳	8270E	Total/NA
Benzo[a]pyrene	0.53		0.37	0.23	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	20	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.34	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.54		0.37	0.17	mg/Kg	20	✳	8270E	Total/NA
Chrysene	2.0		0.37	0.037	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	2.4		0.37	0.11	mg/Kg	20	✳	8270E	Total/NA
Fluorene	0.11	J	0.37	0.068	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.34	J	0.37	0.18	mg/Kg	20	✳	8270E	Total/NA
Naphthalene	0.27	J	0.37	0.060	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	0.78		0.37	0.055	mg/Kg	20	✳	8270E	Total/NA
Pyrene	2.1		0.37	0.053	mg/Kg	20	✳	8270E	Total/NA
2-Butoxyethanol	18		1.7	1.6	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.48	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl acetate	0.23	J	1.6	0.22	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.41	J	0.65	0.086	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.31	J	0.65	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	61		54	29	mg/Kg	16.6666	✳	8260D	Total/NA
2-Ethylhexyl acrylate	160		54	40	mg/Kg	16.6666	✳	8260D	Total/NA
1,1'-Biphenyl	0.068	J	0.15	0.052	mg/Kg	2.5	✳	8270E	Total/NA
2-Methylnaphthalene	0.70		0.046	0.0060	mg/Kg	2.5	✳	8270E	Total/NA
Acenaphthene	0.12		0.046	0.0088	mg/Kg	2.5	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16) (Continued)

Lab Sample ID: 240-181894-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthylene	0.16		0.046	0.012	mg/Kg	2.5	✳	8270E	Total/NA
Anthracene	0.28		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]anthracene	0.62		0.046	0.010	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[a]pyrene	0.51		0.046	0.029	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.2		0.046	0.020	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.35		0.046	0.022	mg/Kg	2.5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.32		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Carbazole	0.14	J	0.15	0.058	mg/Kg	2.5	✳	8270E	Total/NA
Chrysene	0.98		0.046	0.0046	mg/Kg	2.5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.12		0.046	0.021	mg/Kg	2.5	✳	8270E	Total/NA
Dibenzofuran	0.28		0.15	0.040	mg/Kg	2.5	✳	8270E	Total/NA
Fluoranthene	1.2		0.046	0.014	mg/Kg	2.5	✳	8270E	Total/NA
Fluorene	0.14		0.046	0.0084	mg/Kg	2.5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.37		0.046	0.023	mg/Kg	2.5	✳	8270E	Total/NA
Naphthalene	0.43		0.046	0.0074	mg/Kg	2.5	✳	8270E	Total/NA
Phenanthrene	0.91		0.046	0.0069	mg/Kg	2.5	✳	8270E	Total/NA
Pyrene	1.2		0.046	0.0066	mg/Kg	2.5	✳	8270E	Total/NA
2-Butoxyethanol	3.0		0.22	0.20	mg/Kg	2.5	✳	8270E	Total/NA
Arsenic	0.013	J B	0.050	0.0041	mg/L	1		6010D	TCPLP
Barium	0.53	B	0.50	0.0013	mg/L	1		6010D	TCPLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCPLP
Lead	0.0036	J	0.050	0.0028	mg/L	1		6010D	TCPLP

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.35	J	1.4	0.33	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.068	J	0.34	0.058	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.059	J	0.34	0.052	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.71		0.69	0.091	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.25	J	0.34	0.17	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.55	J	0.69	0.12	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	340		340	190	mg/Kg	100	✳	8260D	Total/NA
2-Ethylhexyl acrylate	720		340	260	mg/Kg	100	✳	8260D	Total/NA
2-Methylnaphthalene	0.74	J	2.0	0.26	mg/Kg	100	✳	8270E	Total/NA
Anthracene	0.49	J	2.0	0.32	mg/Kg	100	✳	8270E	Total/NA
Benzo[a]anthracene	1.6	J	2.0	0.45	mg/Kg	100	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.8	J	2.0	0.85	mg/Kg	100	✳	8270E	Total/NA
Chrysene	1.8	J	2.0	0.19	mg/Kg	100	✳	8270E	Total/NA
Fluoranthene	3.8		2.0	0.58	mg/Kg	100	✳	8270E	Total/NA
Naphthalene	0.58	J	2.0	0.32	mg/Kg	100	✳	8270E	Total/NA
Phenanthrene	1.5	J	2.0	0.29	mg/Kg	100	✳	8270E	Total/NA
Pyrene	3.8		2.0	0.28	mg/Kg	100	✳	8270E	Total/NA
2-Butoxyethanol	120		9.2	8.6	mg/Kg	100	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCPLP
Barium	0.44	J B	0.50	0.0013	mg/L	1		6010D	TCPLP
Cadmium	0.0016	J	0.050	0.00020	mg/L	1		6010D	TCPLP
Lead	0.013	J	0.050	0.0028	mg/L	1		6010D	TCPLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.027	J B	0.25	0.0012	mg/L	1		8260D	TCLP
Vinyl chloride	0.0075	J F2	0.025	0.00045	mg/L	1		8260D	TCLP
1,2,3,4,6,7,8-HpCDD	69	B	5.9	0.097	ng/Kg	1	*	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	14	B	5.9	0.028	ng/Kg	1	*	8290A	Total/NA
1,2,3,4,7,8-HxCDD	0.89	J B	5.9	0.025	ng/Kg	1	*	8290A	Total/NA
1,2,3,4,7,8-HxCDF	2.2	J	5.9	0.047	ng/Kg	1	*	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	1.5	J B	5.9	0.036	ng/Kg	1	*	8290A	Total/NA
1,2,3,6,7,8-HxCDD	1.8	J B	5.9	0.024	ng/Kg	1	*	8290A	Total/NA
1,2,3,6,7,8-HxCDF	1.5	J B	5.9	0.047	ng/Kg	1	*	8290A	Total/NA
1,2,3,7,8-PeCDD	0.83	J I B	5.9	0.014	ng/Kg	1	*	8290A	Total/NA
1,2,3,7,8-PeCDF	1.0	J I B	5.9	0.043	ng/Kg	1	*	8290A	Total/NA
1,2,3,7,8,9-HxCDD	1.3	J B	5.9	0.023	ng/Kg	1	*	8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.49	J B	5.9	0.050	ng/Kg	1	*	8290A	Total/NA
2,3,4,6,7,8-HxCDF	1.5	J B	5.9	0.045	ng/Kg	1	*	8290A	Total/NA
2,3,4,7,8-PeCDF	2.3	J B	5.9	0.036	ng/Kg	1	*	8290A	Total/NA
2,3,7,8-TCDD	0.15	J	1.2	0.0082	ng/Kg	1	*	8290A	Total/NA
2,3,7,8-TCDF	0.51	J B	1.2	0.030	ng/Kg	1	*	8290A	Total/NA
OCDD	680	B	12	0.062	ng/Kg	1	*	8290A	Total/NA
OCDF	46	B	12	0.025	ng/Kg	1	*	8290A	Total/NA
Total HxCDD	29	B	5.9	0.024	ng/Kg	1	*	8290A	Total/NA
Total HxCDF	22	I B	5.9	0.047	ng/Kg	1	*	8290A	Total/NA
Total HpCDD	200	B	5.9	0.097	ng/Kg	1	*	8290A	Total/NA
Total HpCDF	39	B	5.9	0.032	ng/Kg	1	*	8290A	Total/NA
Total PeCDD	8.1	I B	5.9	0.014	ng/Kg	1	*	8290A	Total/NA
Total PeCDF	23	I B	5.9	0.040	ng/Kg	1	*	8290A	Total/NA
Total TCDD	6.2	I B	1.2	0.0082	ng/Kg	1	*	8290A	Total/NA
Total TCDF	12	I B	1.2	0.030	ng/Kg	1	*	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2,2-Tetrachloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1,2-Trichloroethane	ND		0.40	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1-Dichloroethane	ND		0.40	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,1-Dichloroethene	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2,4-Trichlorobenzene	ND		0.40	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dibromo-3-Chloropropane	ND		0.80	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Ethylene Dibromide	ND		0.40	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichlorobenzene	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloroethane	ND		0.40	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloropropane	ND		0.40	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,3-Dichlorobenzene	ND		0.40	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
1,4-Dichlorobenzene	ND		0.40	0.089	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
2-Butanone (MEK)	ND		1.6	0.25	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
2-Hexanone	ND		1.6	0.42	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
4-Methyl-2-pentanone (MIBK)	ND		1.6	0.38	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Acetone	ND		1.6	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Benzene	ND		0.40	0.068	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Dichlorobromomethane	ND		0.40	0.098	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Bromoform	ND		0.40	0.37	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Bromomethane	ND		0.40	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Carbon disulfide	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Carbon tetrachloride	ND		0.40	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chlorobenzene	ND		0.40	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloroethane	ND		0.40	0.24	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloroform	ND		0.40	0.087	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chloromethane	ND		0.40	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
cis-1,2-Dichloroethene	ND		0.40	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
cis-1,3-Dichloropropene	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Cyclohexane	ND		0.80	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Chlorodibromomethane	ND		0.40	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Dichlorodifluoromethane	ND		0.40	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Ethylbenzene	0.084	J	0.40	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Isopropylbenzene	0.098	J	0.40	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methyl acetate	0.38	J	2.0	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methyl tert-butyl ether	ND		0.40	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methylcyclohexane	0.91		0.80	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Methylene Chloride	ND		0.80	0.62	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Styrene	ND		0.40	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Tetrachloroethene	ND		0.40	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Toluene	ND		0.40	0.39	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
trans-1,2-Dichloroethene	ND		0.40	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
trans-1,3-Dichloropropene	ND		0.40	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Trichloroethene	ND		0.40	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Trichlorofluoromethane	ND		0.40	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Vinyl chloride	ND		0.40	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Xylenes, Total	0.80		0.80	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 08:55	1
Butyl acrylate	25		21	11	mg/Kg	✱	03/15/23 13:01	03/17/23 20:32	5.26315 789

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		4.2	1.0	mg/Kg	☼	03/15/23 13:01	03/17/23 20:32	5.26315 789
2-Ethylhexyl acrylate	98		21	16	mg/Kg	☼	03/15/23 13:01	03/17/23 20:32	5.26315 789
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		56 - 125				03/15/23 13:01	03/17/23 08:55	1
Toluene-d8 (Surr)	108		56 - 125				03/15/23 13:01	03/17/23 20:32	5.26315 789
Dibromofluoromethane (Surr)	80		41 - 138				03/15/23 13:01	03/17/23 08:55	1
Dibromofluoromethane (Surr)	94		41 - 138				03/15/23 13:01	03/17/23 20:32	5.26315 789
4-Bromofluorobenzene (Surr)	104		41 - 143				03/15/23 13:01	03/17/23 08:55	1
4-Bromofluorobenzene (Surr)	113		41 - 143				03/15/23 13:01	03/17/23 20:32	5.26315 789
1,2-Dichloroethane-d4 (Surr)	79		58 - 125				03/15/23 13:01	03/17/23 08:55	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125				03/15/23 13:01	03/17/23 20:32	5.26315 789

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.072	J	0.16	0.054	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
bis (2-chloroisopropyl) ether	ND		0.32	0.032	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4,5-Trichlorophenol	ND		0.48	0.22	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4,6-Trichlorophenol	ND		0.48	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dichlorophenol	ND		0.48	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dimethylphenol	ND		0.48	0.13	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dinitrophenol	ND		1.0	0.45	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,4-Dinitrotoluene	ND		0.63	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2,6-Dinitrotoluene	ND		0.63	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Chloronaphthalene	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Chlorophenol	ND		0.16	0.032	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Methylnaphthalene	0.68		0.048	0.0062	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Methylphenol	ND		0.63	0.098	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Nitroaniline	ND		0.63	0.13	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
2-Nitrophenol	ND		0.16	0.041	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
3,3'-Dichlorobenzidine	ND		0.32	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
3-Nitroaniline	ND		0.63	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Bromophenyl phenyl ether	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chloro-3-methylphenol	ND		0.48	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chloroaniline	ND		0.48	0.095	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Chlorophenyl phenyl ether	ND		0.16	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Nitroaniline	ND		0.63	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
4-Nitrophenol	ND		1.0	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acenaphthene	0.16		0.048	0.0091	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acenaphthylene	0.18		0.048	0.013	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Acetophenone	ND		0.32	0.035	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Anthracene	0.39		0.048	0.0076	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Atrazine	ND		0.63	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5
Benzaldehyde	ND		0.32	0.073	mg/Kg	☼	03/15/23 09:31	03/17/23 18:24	2.5

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.98		0.048	0.011	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[a]pyrene	0.67		0.048	0.030	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[b]fluoranthene	1.5		0.048	0.021	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[g,h,i]perylene	0.43		0.048	0.022	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Benzo[k]fluoranthene	0.45		0.048	0.022	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-chloroethoxy)methane	ND		0.32	0.038	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-chloroethyl)ether	ND		0.32	0.038	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Butyl benzyl phthalate	ND		0.22	0.070	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Caprolactam	ND		1.0	0.24	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Carbazole	0.15	J	0.16	0.060	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Chrysene	1.3		0.048	0.0047	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Dibenz(a,h)anthracene	0.13		0.048	0.022	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Dibenzofuran	0.31		0.16	0.041	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Diethyl phthalate	ND		0.22	0.098	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Dimethyl phthalate	ND		0.22	0.044	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Di-n-octyl phthalate	ND		0.22	0.089	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Fluoranthene	1.7		0.048	0.014	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Fluorene	0.17		0.048	0.0087	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorobenzene	ND		0.048	0.0090	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorobutadiene	ND		0.16	0.038	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Hexachlorocyclopentadiene	ND		1.0	0.20	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Hexachloroethane	ND		0.16	0.029	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Indeno[1,2,3-cd]pyrene	0.42		0.048	0.023	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Isophorone	ND		0.16	0.038	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
N-Nitrosodi-n-propylamine	ND		0.16	0.035	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
N-Nitrosodiphenylamine	ND		0.16	0.038	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Naphthalene	0.41		0.048	0.0076	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Nitrobenzene	ND		0.32	0.041	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Pentachlorophenol	ND		0.48	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Phenanthrene	1.1		0.048	0.0071	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Phenol	ND		0.16	0.025	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
Pyrene	1.7		0.048	0.0068	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
3 & 4 Methylphenol	ND		1.3	0.092	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5
2-Butoxyethanol	2.4		0.22	0.21	mg/Kg	✳	03/15/23 09:31	03/17/23 18:24	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	52		46 - 137	03/15/23 09:31	03/17/23 18:24	2.5
Phenol-d5 (Surr)	40		26 - 120	03/15/23 09:31	03/17/23 18:24	2.5
Nitrobenzene-d5 (Surr)	32		25 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2-Fluorophenol (Surr)	35		20 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2-Fluorobiphenyl (Surr)	42		34 - 120	03/15/23 09:31	03/17/23 18:24	2.5
2,4,6-Tribromophenol (Surr)	32		10 - 120	03/15/23 09:31	03/17/23 18:24	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:08	1
Barium	0.60	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:08	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:08	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:08	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:08	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:08	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.8		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.2		0.1	0.1	%			03/15/23 13:31	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1,2-Trichloroethane	ND		0.34	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1-Dichloroethane	ND		0.34	0.066	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dibromo-3-Chloropropane	ND		0.69	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichlorobenzene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloropropane	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
1,4-Dichlorobenzene	ND		0.34	0.076	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
2-Butanone (MEK)	ND		1.4	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Acetone	ND		1.4	0.34	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Benzene	ND		0.34	0.058	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Dichlorobromomethane	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chloromethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
cis-1,2-Dichloroethene	ND		0.34	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Cyclohexane	ND		0.69	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Dichlorodifluoromethane	ND		0.34	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Ethylbenzene	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Isopropylbenzene	0.055	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methyl tert-butyl ether	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methylcyclohexane	0.69		0.69	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Methylene Chloride	ND		0.69	0.53	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Styrene	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
trans-1,2-Dichloroethene	ND		0.34	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Trichloroethene	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Xylenes, Total	0.42	J	0.69	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 07:44	1
Butyl acrylate	41		17	9.3	mg/Kg	✱	03/15/23 13:01	03/16/23 23:47	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		3.4	0.81	mg/Kg	☼	03/15/23 13:01	03/16/23 23:47	5
2-Ethylhexyl acrylate	99		34	26	mg/Kg	☼	03/15/23 13:01	03/17/23 20:57	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		56 - 125				03/15/23 13:01	03/16/23 23:47	5
Toluene-d8 (Surr)	90		56 - 125				03/15/23 13:01	03/17/23 07:44	1
Toluene-d8 (Surr)	109		56 - 125				03/15/23 13:01	03/17/23 20:57	10
Dibromofluoromethane (Surr)	89		41 - 138				03/15/23 13:01	03/16/23 23:47	5
Dibromofluoromethane (Surr)	81		41 - 138				03/15/23 13:01	03/17/23 07:44	1
Dibromofluoromethane (Surr)	94		41 - 138				03/15/23 13:01	03/17/23 20:57	10
4-Bromofluorobenzene (Surr)	111		41 - 143				03/15/23 13:01	03/16/23 23:47	5
4-Bromofluorobenzene (Surr)	102		41 - 143				03/15/23 13:01	03/17/23 07:44	1
4-Bromofluorobenzene (Surr)	114		41 - 143				03/15/23 13:01	03/17/23 20:57	10
1,2-Dichloroethane-d4 (Surr)	101		58 - 125				03/15/23 13:01	03/16/23 23:47	5
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				03/15/23 13:01	03/17/23 07:44	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125				03/15/23 13:01	03/17/23 20:57	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.074	J	0.15	0.052	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
bis (2-chloroisopropyl) ether	ND		0.31	0.031	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4,5-Trichlorophenol	ND		0.46	0.21	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4,6-Trichlorophenol	ND		0.46	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dichlorophenol	ND		0.46	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dimethylphenol	ND		0.46	0.12	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dinitrophenol	ND		1.0	0.44	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,4-Dinitrotoluene	ND		0.61	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2,6-Dinitrotoluene	ND		0.61	0.17	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Chloronaphthalene	ND		0.15	0.043	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Chlorophenol	ND		0.15	0.031	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Methylnaphthalene	0.55		0.046	0.0060	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Methylphenol	ND		0.61	0.095	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Nitroaniline	ND		0.61	0.12	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
2-Nitrophenol	ND		0.15	0.040	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
3,3'-Dichlorobenzidine	ND		0.31	0.13	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
3-Nitroaniline	ND		0.61	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Bromophenyl phenyl ether	ND		0.15	0.043	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Chloro-3-methylphenol	ND		0.46	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Chloroaniline	ND		0.46	0.092	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Chlorophenyl phenyl ether	ND		0.15	0.043	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Nitroaniline	ND		0.61	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
4-Nitrophenol	ND		1.0	0.29	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Acenaphthene	0.11		0.046	0.0088	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Acenaphthylene	0.10		0.046	0.012	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Acetophenone	ND		0.31	0.034	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Anthracene	0.28		0.046	0.0074	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Atrazine	ND		0.61	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Benzaldehyde	ND		0.31	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[a]anthracene	0.83		0.046	0.010	mg/Kg	☼	03/15/23 09:31	03/17/23 18:49	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	0.55		0.046	0.029	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[b]fluoranthene	1.0		0.046	0.020	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[g,h,i]perylene	0.31		0.046	0.022	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Benzo[k]fluoranthene	0.41		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-chloroethoxy)methane	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-chloroethyl)ether	ND		0.31	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Butyl benzyl phthalate	ND		0.22	0.068	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Caprolactam	ND		1.0	0.23	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Carbazole	0.15		0.15	0.058	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Chrysene	1.1		0.046	0.0046	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dibenz(a,h)anthracene	0.092		0.046	0.021	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dibenzofuran	0.30		0.15	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Diethyl phthalate	ND		0.22	0.095	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Dimethyl phthalate	ND		0.22	0.043	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Di-n-octyl phthalate	ND		0.22	0.086	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Fluoranthene	1.7		0.046	0.014	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Fluorene	0.17		0.046	0.0084	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorobenzene	ND		0.046	0.0088	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorobutadiene	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachlorocyclopentadiene	ND		1.0	0.19	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Hexachloroethane	ND		0.15	0.028	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Indeno[1,2,3-cd]pyrene	0.27		0.046	0.023	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Isophorone	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
N-Nitrosodi-n-propylamine	ND		0.15	0.034	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
N-Nitrosodiphenylamine	ND		0.15	0.037	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Naphthalene	0.35		0.046	0.0074	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Nitrobenzene	ND		0.31	0.040	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Pentachlorophenol	ND		0.46	0.18	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Phenanthrene	1.0		0.046	0.0069	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Phenol	ND		0.15	0.025	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
Pyrene	1.6		0.046	0.0066	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
3 & 4 Methylphenol	ND		1.2	0.089	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5
2-Butoxyethanol	2.5		0.22	0.20	mg/Kg	✱	03/15/23 09:31	03/17/23 18:49	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	53		46 - 137	03/15/23 09:31	03/17/23 18:49	2.5
Phenol-d5 (Surr)	47		26 - 120	03/15/23 09:31	03/17/23 18:49	2.5
Nitrobenzene-d5 (Surr)	33		25 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2-Fluorophenol (Surr)	42		20 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2-Fluorobiphenyl (Surr)	47		34 - 120	03/15/23 09:31	03/17/23 18:49	2.5
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/15/23 09:31	03/17/23 18:49	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:12	1
Barium	0.50	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:12	1
Cadmium	0.0011	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:12	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:12	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:12	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.0		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.0		0.1	0.1	%			03/15/23 13:31	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1-Dichloroethane	ND		0.34	0.065	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dibromo-3-Chloropropane	ND		0.68	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,2-Dichloropropane	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
2-Butanone (MEK)	ND		1.4	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.32	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Acetone	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Benzene	ND		0.34	0.057	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloroethane	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chloromethane	ND		0.34	0.090	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
cis-1,2-Dichloroethene	ND		0.34	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Cyclohexane	0.26	J	0.68	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Dichlorodifluoromethane	ND		0.34	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Ethylbenzene	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Isopropylbenzene	0.058	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methyl tert-butyl ether	ND		0.34	0.050	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methylcyclohexane	0.99		0.68	0.090	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Methylene Chloride	ND		0.68	0.52	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
trans-1,2-Dichloroethene	ND		0.34	0.084	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Trichloroethene	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Vinyl chloride	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Xylenes, Total	0.52	J	0.68	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1
Butyl acrylate	3.3	J	3.4	1.8	mg/Kg	✱	03/15/23 13:01	03/17/23 00:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.68	0.16	mg/Kg	☼	03/15/23 13:01	03/17/23 00:12	1
2-Ethylhexyl acrylate	11		3.4	2.5	mg/Kg	☼	03/15/23 13:01	03/17/23 00:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		56 - 125				03/15/23 13:01	03/17/23 00:12	1
Dibromofluoromethane (Surr)	88		41 - 138				03/15/23 13:01	03/17/23 00:12	1
4-Bromofluorobenzene (Surr)	113		41 - 143				03/15/23 13:01	03/17/23 00:12	1
1,2-Dichloroethane-d4 (Surr)	103		58 - 125				03/15/23 13:01	03/17/23 00:12	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.2	2.1	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
bis (2-chloroisopropyl) ether	ND		12	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4,5-Trichlorophenol	ND		18	8.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4,6-Trichlorophenol	ND		18	7.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dichlorophenol	ND		18	5.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dimethylphenol	ND		18	4.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dinitrophenol	ND		41	17	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,4-Dinitrotoluene	ND		25	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2,6-Dinitrotoluene	ND		25	6.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Chloronaphthalene	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Chlorophenol	ND		6.2	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Methylnaphthalene	1.0 J		1.8	0.24	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Methylphenol	ND		25	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Nitroaniline	ND		25	4.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Nitrophenol	ND		6.2	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
3,3'-Dichlorobenzidine	ND		12	5.3	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
3-Nitroaniline	ND		25	6.0	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4,6-Dinitro-2-methylphenol	ND		41	9.9	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Bromophenyl phenyl ether	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chloro-3-methylphenol	ND		18	5.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chloroaniline	ND		18	3.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Chlorophenyl phenyl ether	ND		6.2	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Nitroaniline	ND		25	7.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
4-Nitrophenol	ND		41	12	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acenaphthene	ND		1.8	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acenaphthylene	ND		1.8	0.49	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Acetophenone	ND		12	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Anthracene	ND		1.8	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Atrazine	ND		25	4.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzaldehyde	ND		12	2.8	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[a]anthracene	ND		1.8	0.42	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[a]pyrene	ND		1.8	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[b]fluoranthene	ND		1.8	0.80	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[g,h,i]perylene	ND		1.8	0.87	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Benzo[k]fluoranthene	ND		1.8	0.85	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-chloroethoxy)methane	ND		12	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-chloroethyl)ether	ND		12	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Bis(2-ethylhexyl) phthalate	ND		8.6	6.3	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Butyl benzyl phthalate	ND		8.6	2.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		41	9.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Carbazole	ND		6.2	2.3	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Chrysene	ND		1.8	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Dibenz(a,h)anthracene	ND		1.8	0.85	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Dibenzofuran	ND		6.2	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Diethyl phthalate	ND		8.6	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Dimethyl phthalate	ND		8.6	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Di-n-butyl phthalate	ND		8.6	6.2	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Di-n-octyl phthalate	ND		8.6	3.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Fluoranthene	1.1	J	1.8	0.55	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Fluorene	ND		1.8	0.34	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Hexachlorobenzene	ND		1.8	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Hexachlorobutadiene	ND		6.2	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Hexachlorocyclopentadiene	ND		41	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Hexachloroethane	ND		6.2	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Indeno[1,2,3-cd]pyrene	ND		1.8	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Isophorone	ND		6.2	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
N-Nitrosodi-n-propylamine	ND		6.2	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
N-Nitrosodiphenylamine	ND		6.2	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Naphthalene	ND		1.8	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Nitrobenzene	ND		12	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Pentachlorophenol	ND		18	7.1	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Phenanthrene	0.91	J	1.8	0.27	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Phenol	ND		6.2	0.99	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
Pyrene	1.0	J	1.8	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
3 & 4 Methylphenol	ND		49	3.6	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100
2-Butoxyethanol	130		8.6	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 16:46	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	49		46 - 137	03/15/23 09:31	03/17/23 16:46	100
Phenol-d5 (Surr)	40		26 - 120	03/15/23 09:31	03/17/23 16:46	100
Nitrobenzene-d5 (Surr)	24	S1-	25 - 120	03/15/23 09:31	03/17/23 16:46	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	03/15/23 09:31	03/17/23 16:46	100
2-Fluorobiphenyl (Surr)	36		34 - 120	03/15/23 09:31	03/17/23 16:46	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/15/23 09:31	03/17/23 16:46	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:17	1
Barium	0.36	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:17	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:17	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:17	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:17	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:17	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:17	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:03	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.7		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.3		0.1	0.1	%			03/15/23 13:31	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.37	0.11	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,1,2,2-Tetrachloroethane	ND		0.37	0.22	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.37	0.098	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,1,2-Trichloroethane	ND		0.37	0.084	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,1-Dichloroethane	ND		0.37	0.070	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,1-Dichloroethene	ND		0.37	0.12	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,2,4-Trichlorobenzene	ND		0.37	0.19	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,2-Dibromo-3-Chloropropane	ND		0.73	0.32	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Ethylene Dibromide	ND		0.37	0.12	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichlorobenzene	ND		0.37	0.18	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloroethane	ND		0.37	0.069	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloropropane	ND		0.37	0.054	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,3-Dichlorobenzene	ND		0.37	0.067	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
1,4-Dichlorobenzene	ND		0.37	0.081	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
2-Butanone (MEK)	ND		1.5	0.23	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
2-Hexanone	ND		1.5	0.39	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.35	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Acetone	ND		1.5	0.36	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Benzene	ND		0.37	0.062	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Dichlorobromomethane	ND		0.37	0.089	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Bromoform	ND		0.37	0.33	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Bromomethane	ND		0.37	0.24	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Carbon disulfide	ND		0.37	0.16	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Carbon tetrachloride	ND		0.37	0.15	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Chlorobenzene	ND		0.37	0.051	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Chloroethane	ND		0.37	0.22	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Chloroform	ND		0.37	0.079	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Chloromethane	ND		0.37	0.097	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
cis-1,2-Dichloroethene	ND		0.37	0.059	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
cis-1,3-Dichloropropene	ND		0.37	0.18	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Cyclohexane	ND		0.73	0.24	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Chlorodibromomethane	ND		0.37	0.17	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Dichlorodifluoromethane	ND		0.37	0.078	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Ethylbenzene	ND		0.37	0.069	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Isopropylbenzene	ND		0.37	0.056	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Methyl acetate	ND		1.8	0.25	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Methyl tert-butyl ether	ND		0.37	0.054	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Methylcyclohexane	0.62	J	0.73	0.097	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Methylene Chloride	ND		0.73	0.56	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Styrene	ND		0.37	0.076	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Tetrachloroethene	ND		0.37	0.14	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Toluene	ND		0.37	0.35	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
trans-1,2-Dichloroethene	ND		0.37	0.091	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
trans-1,3-Dichloropropene	ND		0.37	0.15	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Trichloroethene	ND		0.37	0.21	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Trichlorofluoromethane	ND		0.37	0.20	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Vinyl chloride	0.24	J	0.37	0.18	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Xylenes, Total	0.41	J	0.73	0.13	mg/Kg	✳	03/15/23 13:01	03/17/23 09:19	1
Butyl acrylate	40		31	17	mg/Kg	✳	03/15/23 13:01	03/17/23 20:07	8.3333

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		6.1	1.4	mg/Kg	☼	03/15/23 13:01	03/17/23 20:07	8.3333
2-Ethylhexyl acrylate	130		31	23	mg/Kg	☼	03/15/23 13:01	03/17/23 20:07	8.3333
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		56 - 125				03/15/23 13:01	03/17/23 09:19	1
Toluene-d8 (Surr)	109		56 - 125				03/15/23 13:01	03/17/23 20:07	8.3333
Dibromofluoromethane (Surr)	79		41 - 138				03/15/23 13:01	03/17/23 09:19	1
Dibromofluoromethane (Surr)	94		41 - 138				03/15/23 13:01	03/17/23 20:07	8.3333
4-Bromofluorobenzene (Surr)	97		41 - 143				03/15/23 13:01	03/17/23 09:19	1
4-Bromofluorobenzene (Surr)	114		41 - 143				03/15/23 13:01	03/17/23 20:07	8.3333
1,2-Dichloroethane-d4 (Surr)	80		58 - 125				03/15/23 13:01	03/17/23 09:19	1
1,2-Dichloroethane-d4 (Surr)	103		58 - 125				03/15/23 13:01	03/17/23 20:07	8.3333

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.32	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
bis (2-chloroisopropyl) ether	ND		0.64	0.064	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4,5-Trichlorophenol	ND		0.96	0.44	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4,6-Trichlorophenol	ND		0.96	0.41	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dichlorophenol	ND		0.96	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dimethylphenol	ND		0.96	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dinitrophenol	ND		2.1	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,4-Dinitrotoluene	ND		1.3	0.40	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2,6-Dinitrotoluene	ND		1.3	0.36	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Chloronaphthalene	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Chlorophenol	ND		0.32	0.064	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Methylnaphthalene	0.76		0.096	0.013	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Methylphenol	ND		1.3	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Nitroaniline	ND		1.3	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Nitrophenol	ND		0.32	0.084	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
3,3'-Dichlorobenzidine	ND		0.64	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
3-Nitroaniline	ND		1.3	0.31	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4,6-Dinitro-2-methylphenol	ND		2.1	0.51	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Bromophenyl phenyl ether	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chloro-3-methylphenol	ND		0.96	0.29	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chloroaniline	ND		0.96	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Chlorophenyl phenyl ether	ND		0.32	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Nitroaniline	ND		1.3	0.39	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
4-Nitrophenol	ND		2.1	0.60	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acenaphthene	0.074	J	0.096	0.018	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acenaphthylene	0.12		0.096	0.026	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Acetophenone	ND		0.64	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Anthracene	0.17		0.096	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Atrazine	ND		1.3	0.23	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzaldehyde	ND		0.64	0.15	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[a]anthracene	0.40		0.096	0.022	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[a]pyrene	0.35		0.096	0.060	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[b]fluoranthene	0.82		0.096	0.042	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[g,h,i]perylene	0.26		0.096	0.046	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Benzo[k]fluoranthene	0.21		0.096	0.045	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.64	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Bis(2-chloroethyl)ether	ND		0.64	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Bis(2-ethylhexyl) phthalate	ND		0.45	0.33	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Butyl benzyl phthalate	ND		0.45	0.14	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Caprolactam	ND		2.1	0.48	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Carbazole	ND		0.32	0.12	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Chrysene	0.63		0.096	0.0096	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Dibenz(a,h)anthracene	ND		0.096	0.044	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Dibenzofuran	0.28	J	0.32	0.084	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Diethyl phthalate	ND		0.45	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Dimethyl phthalate	ND		0.45	0.090	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Di-n-butyl phthalate	ND		0.45	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Di-n-octyl phthalate	ND		0.45	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Fluoranthene	0.69		0.096	0.029	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Fluorene	0.079	J	0.096	0.018	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Hexachlorobenzene	ND		0.096	0.018	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Hexachlorobutadiene	ND		0.32	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Hexachlorocyclopentadiene	ND		2.1	0.40	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Hexachloroethane	ND		0.32	0.058	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Indeno[1,2,3-cd]pyrene	0.25		0.096	0.047	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Isophorone	ND		0.32	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
N-Nitrosodi-n-propylamine	ND		0.32	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
N-Nitrosodiphenylamine	ND		0.32	0.077	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Naphthalene	0.49		0.096	0.015	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Nitrobenzene	ND		0.64	0.084	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Pentachlorophenol	ND		0.96	0.37	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Phenanthrene	0.71		0.096	0.014	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Phenol	ND		0.32	0.051	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
Pyrene	0.68		0.096	0.014	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
3 & 4 Methylphenol	ND		2.6	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5
2-Butoxyethanol	5.0		0.45	0.42	mg/Kg	☼	03/15/23 09:31	03/17/23 15:33	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	47		46 - 137	03/15/23 09:31	03/17/23 15:33	5
Phenol-d5 (Surr)	45		26 - 120	03/15/23 09:31	03/17/23 15:33	5
Nitrobenzene-d5 (Surr)	43		25 - 120	03/15/23 09:31	03/17/23 15:33	5
2-Fluorophenol (Surr)	39		20 - 120	03/15/23 09:31	03/17/23 15:33	5
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 15:33	5
2,4,6-Tribromophenol (Surr)	35		10 - 120	03/15/23 09:31	03/17/23 15:33	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:22	1
Barium	0.86	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:22	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:22	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:22	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:22	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:22	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:22	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.7		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.3		0.1	0.1	%			03/15/23 13:31	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.29	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2,2-Tetrachloroethane	ND		0.29	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.29	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1,2-Trichloroethane	ND		0.29	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1-Dichloroethane	ND		0.29	0.056	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,1-Dichloroethene	ND		0.29	0.096	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2,4-Trichlorobenzene	ND		0.29	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dibromo-3-Chloropropane	ND		0.58	0.26	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Ethylene Dibromide	ND		0.29	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichlorobenzene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloroethane	ND		0.29	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloropropane	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,3-Dichlorobenzene	ND		0.29	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
1,4-Dichlorobenzene	ND		0.29	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
2-Butanone (MEK)	ND		1.2	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
2-Hexanone	ND		1.2	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
4-Methyl-2-pentanone (MIBK)	ND		1.2	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Acetone	ND		1.2	0.29	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Benzene	0.12	J	0.29	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Dichlorobromomethane	ND		0.29	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Bromoform	ND		0.29	0.27	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Bromomethane	ND		0.29	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Carbon disulfide	ND		0.29	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Carbon tetrachloride	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chlorobenzene	ND		0.29	0.041	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloroethane	ND		0.29	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloroform	ND		0.29	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chloromethane	ND		0.29	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
cis-1,2-Dichloroethene	ND		0.29	0.047	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
cis-1,3-Dichloropropene	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Cyclohexane	ND		0.58	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Chlorodibromomethane	ND		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Dichlorodifluoromethane	ND		0.29	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Ethylbenzene	ND		0.29	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Isopropylbenzene	ND		0.29	0.044	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methyl acetate	0.62	J	1.5	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methyl tert-butyl ether	ND		0.29	0.043	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methylcyclohexane	0.28	J	0.58	0.077	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Methylene Chloride	ND		0.58	0.45	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Styrene	ND		0.29	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Tetrachloroethene	ND		0.29	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Toluene	ND		0.29	0.28	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
trans-1,2-Dichloroethene	ND		0.29	0.072	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
trans-1,3-Dichloropropene	ND		0.29	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Trichloroethene	ND		0.29	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Trichlorofluoromethane	ND		0.29	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Vinyl chloride	2.2		0.29	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Xylenes, Total	0.19	J	0.58	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 11:43	1
Butyl acrylate	67		49	26	mg/Kg	✱	03/15/23 13:01	03/17/23 19:42	16.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		9.7	2.3	mg/Kg	☼	03/15/23 13:01	03/17/23 19:42	16.6666
2-Ethylhexyl acrylate	190		49	36	mg/Kg	☼	03/15/23 13:01	03/17/23 19:42	16.6666
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		56 - 125				03/15/23 13:01	03/17/23 11:43	1
Toluene-d8 (Surr)	105		56 - 125				03/15/23 13:01	03/17/23 19:42	16.6666
Dibromofluoromethane (Surr)	79		41 - 138				03/15/23 13:01	03/17/23 11:43	1
Dibromofluoromethane (Surr)	93		41 - 138				03/15/23 13:01	03/17/23 19:42	16.6666
4-Bromofluorobenzene (Surr)	95		41 - 143				03/15/23 13:01	03/17/23 11:43	1
4-Bromofluorobenzene (Surr)	112		41 - 143				03/15/23 13:01	03/17/23 19:42	16.6666
1,2-Dichloroethane-d4 (Surr)	77		58 - 125				03/15/23 13:01	03/17/23 11:43	1
1,2-Dichloroethane-d4 (Surr)	106		58 - 125				03/15/23 13:01	03/17/23 19:42	16.6666

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.42	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
bis (2-chloroisopropyl) ether	ND		2.5	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4,5-Trichlorophenol	ND		3.7	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4,6-Trichlorophenol	ND		3.7	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dichlorophenol	ND		3.7	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dimethylphenol	ND		3.7	0.99	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dinitrophenol	ND		8.2	3.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,4-Dinitrotoluene	ND		5.0	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2,6-Dinitrotoluene	ND		5.0	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Chloronaphthalene	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Chlorophenol	ND		1.2	0.25	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Methylnaphthalene	0.41		0.37	0.049	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Methylphenol	ND		5.0	0.77	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Nitroaniline	ND		5.0	0.99	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Nitrophenol	ND		1.2	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
3,3'-Dichlorobenzidine	ND		2.5	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
3-Nitroaniline	ND		5.0	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4,6-Dinitro-2-methylphenol	ND		8.2	2.0	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Bromophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chloro-3-methylphenol	ND		3.7	1.1	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chloroaniline	ND		3.7	0.74	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Chlorophenyl phenyl ether	ND		1.2	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Nitroaniline	ND		5.0	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
4-Nitrophenol	ND		8.2	2.3	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acenaphthene	ND		0.37	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acenaphthylene	0.11	J	0.37	0.10	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Acetophenone	ND		2.5	0.27	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Anthracene	0.28	J	0.37	0.060	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Atrazine	ND		5.0	0.89	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzaldehyde	ND		2.5	0.57	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[a]anthracene	1.4		0.37	0.085	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[a]pyrene	0.53		0.37	0.23	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[b]fluoranthene	1.1		0.37	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[g,h,i]perylene	0.34	J	0.37	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Benzo[k]fluoranthene	0.54		0.37	0.17	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		2.5	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Bis(2-chloroethyl)ether	ND		2.5	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Bis(2-ethylhexyl) phthalate	ND		1.7	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Butyl benzyl phthalate	ND		1.7	0.55	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Caprolactam	ND		8.2	1.9	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Carbazole	ND		1.2	0.47	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Chrysene	2.0		0.37	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Dibenz(a,h)anthracene	ND		0.37	0.17	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Dibenzofuran	ND		1.2	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Diethyl phthalate	ND		1.7	0.77	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Dimethyl phthalate	ND		1.7	0.35	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Di-n-butyl phthalate	ND		1.7	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Di-n-octyl phthalate	ND		1.7	0.70	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Fluoranthene	2.4		0.37	0.11	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Fluorene	0.11	J	0.37	0.068	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Hexachlorobenzene	ND		0.37	0.071	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Hexachlorobutadiene	ND		1.2	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Hexachlorocyclopentadiene	ND		8.2	1.5	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Hexachloroethane	ND		1.2	0.22	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Indeno[1,2,3-cd]pyrene	0.34	J	0.37	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Isophorone	ND		1.2	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
N-Nitrosodi-n-propylamine	ND		1.2	0.27	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
N-Nitrosodiphenylamine	ND		1.2	0.30	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Naphthalene	0.27	J	0.37	0.060	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Nitrobenzene	ND		2.5	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Pentachlorophenol	ND		3.7	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Phenanthrene	0.78		0.37	0.055	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Phenol	ND		1.2	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
Pyrene	2.1		0.37	0.053	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
3 & 4 Methylphenol	ND		9.9	0.72	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20
2-Butoxyethanol	18		1.7	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 18:00	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	46		46 - 137	03/15/23 09:31	03/17/23 18:00	20
Phenol-d5 (Surr)	33		26 - 120	03/15/23 09:31	03/17/23 18:00	20
Nitrobenzene-d5 (Surr)	33		25 - 120	03/15/23 09:31	03/17/23 18:00	20
2-Fluorophenol (Surr)	33		20 - 120	03/15/23 09:31	03/17/23 18:00	20
2-Fluorobiphenyl (Surr)	43		34 - 120	03/15/23 09:31	03/17/23 18:00	20
2,4,6-Tribromophenol (Surr)	21		10 - 120	03/15/23 09:31	03/17/23 18:00	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:35	1
Barium	0.48	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:35	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:35	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:35	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:35	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:35	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:35	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.9		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.1		0.1	0.1	%			03/15/23 13:31	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.32	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2,2-Tetrachloroethane	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	0.087	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1,2-Trichloroethane	ND		0.32	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1-Dichloroethane	ND		0.32	0.062	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,1-Dichloroethene	ND		0.32	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2,4-Trichlorobenzene	ND		0.32	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dibromo-3-Chloropropane	ND		0.65	0.29	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Ethylene Dibromide	ND		0.32	0.10	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichlorobenzene	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloroethane	ND		0.32	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloropropane	ND		0.32	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,3-Dichlorobenzene	ND		0.32	0.060	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
1,4-Dichlorobenzene	ND		0.32	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
2-Butanone (MEK)	ND		1.3	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
2-Hexanone	ND		1.3	0.34	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
4-Methyl-2-pentanone (MIBK)	ND		1.3	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Acetone	ND		1.3	0.32	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Benzene	ND		0.32	0.054	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Dichlorobromomethane	ND		0.32	0.079	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Bromoform	ND		0.32	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Bromomethane	ND		0.32	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Carbon disulfide	ND		0.32	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Carbon tetrachloride	ND		0.32	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chlorobenzene	ND		0.32	0.045	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloroethane	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloroform	ND		0.32	0.070	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chloromethane	ND		0.32	0.086	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
cis-1,2-Dichloroethene	ND		0.32	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
cis-1,3-Dichloropropene	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Cyclohexane	ND		0.65	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Chlorodibromomethane	ND		0.32	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Dichlorodifluoromethane	ND		0.32	0.069	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Ethylbenzene	ND		0.32	0.061	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Isopropylbenzene	ND		0.32	0.049	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methyl acetate	0.23	J	1.6	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methyl tert-butyl ether	ND		0.32	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methylcyclohexane	0.41	J	0.65	0.086	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Methylene Chloride	ND		0.65	0.50	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Styrene	ND		0.32	0.067	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Tetrachloroethene	ND		0.32	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Toluene	ND		0.32	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
trans-1,2-Dichloroethene	ND		0.32	0.080	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
trans-1,3-Dichloropropene	ND		0.32	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Trichloroethene	ND		0.32	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Trichlorofluoromethane	ND		0.32	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Vinyl chloride	ND		0.32	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Xylenes, Total	0.31	J	0.65	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 12:31	1
Butyl acrylate	61		54	29	mg/Kg	✱	03/15/23 13:01	03/17/23 18:16	16.6666

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		11	2.6	mg/Kg	✳	03/15/23 13:01	03/17/23 18:16	16.6666
2-Ethylhexyl acrylate	160		54	40	mg/Kg	✳	03/15/23 13:01	03/17/23 18:16	16.6666
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		56 - 125				03/15/23 13:01	03/17/23 12:31	1
Toluene-d8 (Surr)	107		56 - 125				03/15/23 13:01	03/17/23 18:16	16.6666
Dibromofluoromethane (Surr)	79		41 - 138				03/15/23 13:01	03/17/23 12:31	1
Dibromofluoromethane (Surr)	93		41 - 138				03/15/23 13:01	03/17/23 18:16	16.6666
4-Bromofluorobenzene (Surr)	97		41 - 143				03/15/23 13:01	03/17/23 12:31	1
4-Bromofluorobenzene (Surr)	112		41 - 143				03/15/23 13:01	03/17/23 18:16	16.6666
1,2-Dichloroethane-d4 (Surr)	78		58 - 125				03/15/23 13:01	03/17/23 12:31	1
1,2-Dichloroethane-d4 (Surr)	105		58 - 125				03/15/23 13:01	03/17/23 18:16	16.6666

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.068	J	0.15	0.052	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
bis (2-chloroisopropyl) ether	ND		0.31	0.031	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4,5-Trichlorophenol	ND		0.46	0.21	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4,6-Trichlorophenol	ND		0.46	0.20	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dichlorophenol	ND		0.46	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dimethylphenol	ND		0.46	0.12	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dinitrophenol	ND		1.0	0.44	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,4-Dinitrotoluene	ND		0.61	0.19	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2,6-Dinitrotoluene	ND		0.61	0.17	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Chloronaphthalene	ND		0.15	0.043	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Chlorophenol	ND		0.15	0.031	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Methylnaphthalene	0.70		0.046	0.0060	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Methylphenol	ND		0.61	0.095	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Nitroaniline	ND		0.61	0.12	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
2-Nitrophenol	ND		0.15	0.040	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
3,3'-Dichlorobenzidine	ND		0.31	0.13	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
3-Nitroaniline	ND		0.61	0.15	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4,6-Dinitro-2-methylphenol	ND		1.0	0.25	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Bromophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Chloro-3-methylphenol	ND		0.46	0.14	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Chloroaniline	ND		0.46	0.092	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Chlorophenyl phenyl ether	ND		0.15	0.043	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Nitroaniline	ND		0.61	0.18	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
4-Nitrophenol	ND		1.0	0.29	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Acenaphthene	0.12		0.046	0.0088	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Acenaphthylene	0.16		0.046	0.012	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Acetophenone	ND		0.31	0.034	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Anthracene	0.28		0.046	0.0074	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Atrazine	ND		0.61	0.11	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzaldehyde	ND		0.31	0.071	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[a]anthracene	0.62		0.046	0.010	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[a]pyrene	0.51		0.046	0.029	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[b]fluoranthene	1.2		0.046	0.020	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[g,h,i]perylene	0.35		0.046	0.022	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5
Benzo[k]fluoranthene	0.32		0.046	0.021	mg/Kg	✳	03/15/23 09:31	03/17/23 19:13	2.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.31	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Bis(2-chloroethyl)ether	ND		0.31	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Bis(2-ethylhexyl) phthalate	ND		0.22	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Butyl benzyl phthalate	ND		0.22	0.068	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Caprolactam	ND		1.0	0.23	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Carbazole	0.14	J	0.15	0.058	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Chrysene	0.98		0.046	0.0046	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Dibenz(a,h)anthracene	0.12		0.046	0.021	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Dibenzofuran	0.28		0.15	0.040	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Diethyl phthalate	ND		0.22	0.095	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Dimethyl phthalate	ND		0.22	0.043	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Di-n-butyl phthalate	ND		0.22	0.16	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Di-n-octyl phthalate	ND		0.22	0.086	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Fluoranthene	1.2		0.046	0.014	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Fluorene	0.14		0.046	0.0084	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorobenzene	ND		0.046	0.0088	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorobutadiene	ND		0.15	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Hexachlorocyclopentadiene	ND		1.0	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Hexachloroethane	ND		0.15	0.028	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Indeno[1,2,3-cd]pyrene	0.37		0.046	0.023	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Isophorone	ND		0.15	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
N-Nitrosodi-n-propylamine	ND		0.15	0.034	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
N-Nitrosodiphenylamine	ND		0.15	0.037	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Naphthalene	0.43		0.046	0.0074	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Nitrobenzene	ND		0.31	0.040	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Pentachlorophenol	ND		0.46	0.18	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Phenanthrene	0.91		0.046	0.0069	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Phenol	ND		0.15	0.025	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
Pyrene	1.2		0.046	0.0066	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
3 & 4 Methylphenol	ND		1.2	0.089	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5
2-Butoxyethanol	3.0		0.22	0.20	mg/Kg	☼	03/15/23 09:31	03/17/23 19:13	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	84		46 - 137	03/15/23 09:31	03/17/23 19:13	2.5
Phenol-d5 (Surr)	82		26 - 120	03/15/23 09:31	03/17/23 19:13	2.5
Nitrobenzene-d5 (Surr)	69		25 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2-Fluorophenol (Surr)	78		20 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2-Fluorobiphenyl (Surr)	78		34 - 120	03/15/23 09:31	03/17/23 19:13	2.5
2,4,6-Tribromophenol (Surr)	60		10 - 120	03/15/23 09:31	03/17/23 19:13	2.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:39	1
Barium	0.53	B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:39	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:39	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:39	1
Lead	0.0036	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:39	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:39	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.1		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	19.9		0.1	0.1	%			03/15/23 13:31	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2,2-Tetrachloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.34	0.092	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1,2-Trichloroethane	ND		0.34	0.078	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1-Dichloroethane	ND		0.34	0.066	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,1-Dichloroethene	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2,4-Trichlorobenzene	ND		0.34	0.18	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dibromo-3-Chloropropane	ND		0.69	0.30	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Ethylene Dibromide	ND		0.34	0.11	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichlorobenzene	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichloroethane	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,2-Dichloropropane	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,3-Dichlorobenzene	ND		0.34	0.063	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
1,4-Dichlorobenzene	ND		0.34	0.075	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
2-Butanone (MEK)	ND		1.4	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
2-Hexanone	ND		1.4	0.36	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
4-Methyl-2-pentanone (MIBK)	ND		1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Acetone	0.35	J	1.4	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Benzene	0.068	J	0.34	0.058	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Dichlorobromomethane	ND		0.34	0.083	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Bromoform	ND		0.34	0.31	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Bromomethane	ND		0.34	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Carbon disulfide	ND		0.34	0.15	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Carbon tetrachloride	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chlorobenzene	ND		0.34	0.048	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloroethane	ND		0.34	0.21	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloroform	ND		0.34	0.074	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chloromethane	ND		0.34	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
cis-1,2-Dichloroethene	ND		0.34	0.055	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
cis-1,3-Dichloropropene	ND		0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Cyclohexane	ND		0.69	0.22	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Chlorodibromomethane	ND		0.34	0.16	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Dichlorodifluoromethane	ND		0.34	0.073	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Ethylbenzene	ND		0.34	0.064	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Isopropylbenzene	0.059	J	0.34	0.052	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methyl acetate	ND		1.7	0.23	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methyl tert-butyl ether	ND		0.34	0.051	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methylcyclohexane	0.71		0.69	0.091	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Methylene Chloride	ND		0.69	0.53	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Styrene	ND		0.34	0.071	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Tetrachloroethene	ND		0.34	0.13	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Toluene	ND		0.34	0.33	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
trans-1,2-Dichloroethene	ND		0.34	0.085	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
trans-1,3-Dichloropropene	ND		0.34	0.14	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Trichloroethene	ND		0.34	0.20	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Trichlorofluoromethane	ND		0.34	0.19	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Vinyl chloride	0.25	J	0.34	0.17	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Xylenes, Total	0.55	J	0.69	0.12	mg/Kg	✱	03/15/23 13:01	03/17/23 13:19	1
Butyl acrylate	340		340	190	mg/Kg	✱	03/15/23 13:01	03/17/23 01:53	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		69	16	mg/Kg	☼	03/15/23 13:01	03/17/23 01:53	100
2-Ethylhexyl acrylate	720		340	260	mg/Kg	☼	03/15/23 13:01	03/17/23 01:53	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125				03/15/23 13:01	03/17/23 01:53	100
Toluene-d8 (Surr)	96		56 - 125				03/15/23 13:01	03/17/23 13:19	1
Dibromofluoromethane (Surr)	92		41 - 138				03/15/23 13:01	03/17/23 01:53	100
Dibromofluoromethane (Surr)	80		41 - 138				03/15/23 13:01	03/17/23 13:19	1
4-Bromofluorobenzene (Surr)	110		41 - 143				03/15/23 13:01	03/17/23 01:53	100
4-Bromofluorobenzene (Surr)	88		41 - 143				03/15/23 13:01	03/17/23 13:19	1
1,2-Dichloroethane-d4 (Surr)	102		58 - 125				03/15/23 13:01	03/17/23 01:53	100
1,2-Dichloroethane-d4 (Surr)	78		58 - 125				03/15/23 13:01	03/17/23 13:19	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.5	2.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4,5-Trichlorophenol	ND		20	9.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4,6-Trichlorophenol	ND		20	8.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dichlorophenol	ND		20	5.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dimethylphenol	ND		20	5.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dinitrophenol	ND		43	19	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,4-Dinitrotoluene	ND		26	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2,6-Dinitrotoluene	ND		26	7.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Chloronaphthalene	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Chlorophenol	ND		6.5	1.3	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Methylnaphthalene	0.74	J	2.0	0.26	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Methylphenol	ND		26	4.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Nitroaniline	ND		26	5.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Nitrophenol	ND		6.5	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3,3'-Dichlorobenzidine	ND		13	5.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3-Nitroaniline	ND		26	6.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4,6-Dinitro-2-methylphenol	ND		43	10	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Bromophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chloro-3-methylphenol	ND		20	5.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chloroaniline	ND		20	3.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Chlorophenyl phenyl ether	ND		6.5	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Nitroaniline	ND		26	7.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
4-Nitrophenol	ND		43	12	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acenaphthene	ND		2.0	0.37	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acenaphthylene	ND		2.0	0.52	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Acetophenone	ND		13	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Anthracene	0.49	J	2.0	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Atrazine	ND		26	4.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzaldehyde	ND		13	3.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[a]anthracene	1.6	J	2.0	0.45	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[a]pyrene	ND		2.0	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[b]fluoranthene	1.8	J	2.0	0.85	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[g,h,i]perylene	ND		2.0	0.93	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Benzo[k]fluoranthene	ND		2.0	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		13	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Bis(2-chloroethyl)ether	ND		13	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Bis(2-ethylhexyl) phthalate	ND		9.2	6.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Butyl benzyl phthalate	ND		9.2	2.9	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Caprolactam	ND		43	9.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Carbazole	ND		6.5	2.5	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Chrysene	1.8	J	2.0	0.19	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dibenz(a,h)anthracene	ND		2.0	0.91	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dibenzofuran	ND		6.5	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Diethyl phthalate	ND		9.2	4.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Dimethyl phthalate	ND		9.2	1.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Di-n-butyl phthalate	ND		9.2	6.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Di-n-octyl phthalate	ND		9.2	3.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Fluoranthene	3.8		2.0	0.58	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Fluorene	ND		2.0	0.36	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorobenzene	ND		2.0	0.37	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorobutadiene	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachlorocyclopentadiene	ND		43	8.1	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Hexachloroethane	ND		6.5	1.2	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Indeno[1,2,3-cd]pyrene	ND		2.0	0.96	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Isophorone	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
N-Nitrosodi-n-propylamine	ND		6.5	1.4	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
N-Nitrosodiphenylamine	ND		6.5	1.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Naphthalene	0.58	J	2.0	0.32	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Nitrobenzene	ND		13	1.7	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Pentachlorophenol	ND		20	7.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Phenanthrene	1.5	J	2.0	0.29	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Phenol	ND		6.5	1.0	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
Pyrene	3.8		2.0	0.28	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
3 & 4 Methylphenol	ND		52	3.8	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100
2-Butoxyethanol	120		9.2	8.6	mg/Kg	☼	03/15/23 09:31	03/17/23 17:11	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	43	S1-	46 - 137	03/15/23 09:31	03/17/23 17:11	100
Phenol-d5 (Surr)	44		26 - 120	03/15/23 09:31	03/17/23 17:11	100
Nitrobenzene-d5 (Surr)	23	S1-	25 - 120	03/15/23 09:31	03/17/23 17:11	100
2-Fluorophenol (Surr)	0	S1-	20 - 120	03/15/23 09:31	03/17/23 17:11	100
2-Fluorobiphenyl (Surr)	33	S1-	34 - 120	03/15/23 09:31	03/17/23 17:11	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/15/23 09:31	03/17/23 17:11	100

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 20:44	1
Barium	0.44	J B	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 20:44	1
Cadmium	0.0016	J	0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 20:44	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 20:44	1
Lead	0.013	J	0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 20:44	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 20:44	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 20:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 15:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	77.5		0.1	0.1	%			03/15/23 13:31	1
Percent Moisture (EPA Moisture)	22.5		0.1	0.1	%			03/15/23 13:31	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/17/23 15:56	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/17/23 15:56	1
2-Butanone (MEK)	0.027	J B	0.25	0.0012	mg/L			03/17/23 15:56	1
Benzene	ND		0.025	0.00042	mg/L			03/17/23 15:56	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/17/23 15:56	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/17/23 15:56	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:56	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/17/23 15:56	1
Vinyl chloride	0.0075	J F2	0.025	0.00045	mg/L			03/17/23 15:56	1
Chloroform	ND		0.025	0.00047	mg/L			03/17/23 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	95		80 - 120					03/17/23 15:56	1
<i>Dibromofluoromethane (Surr)</i>	98		71 - 121					03/17/23 15:56	1
<i>4-Bromofluorobenzene (Surr)</i>	95		80 - 120					03/17/23 15:56	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		76 - 120					03/17/23 15:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/16/23 11:22	03/18/23 16:01	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/16/23 11:22	03/18/23 16:01	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/16/23 11:22	03/18/23 16:01	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/16/23 11:22	03/18/23 16:01	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/16/23 11:22	03/18/23 16:01	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/16/23 11:22	03/18/23 16:01	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/16/23 11:22	03/18/23 16:01	1
Pyridine	ND		0.0040	0.00036	mg/L		03/16/23 11:22	03/18/23 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	116		46 - 137				03/16/23 11:22	03/18/23 16:01	1
<i>Phenol-d5 (Surr)</i>	62		26 - 120				03/16/23 11:22	03/18/23 16:01	1
<i>Nitrobenzene-d5 (Surr)</i>	71		24 - 120				03/16/23 11:22	03/18/23 16:01	1
<i>2-Fluorophenol (Surr)</i>	69		19 - 120				03/16/23 11:22	03/18/23 16:01	1
<i>2-Fluorobiphenyl (Surr)</i>	93		33 - 120				03/16/23 11:22	03/18/23 16:01	1
<i>2,4,6-Tribromophenol (Surr)</i>	90		10 - 120				03/16/23 11:22	03/18/23 16:01	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/16/23 11:26	03/17/23 11:58	1
Endrin	ND		0.00050	0.0000065	mg/L		03/16/23 11:26	03/17/23 11:58	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/16/23 11:26	03/17/23 11:58	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/16/23 11:26	03/17/23 11:58	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/16/23 11:26	03/17/23 11:58	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/16/23 11:26	03/17/23 11:58	1
Toxaphene	ND		0.020	0.000058	mg/L		03/16/23 11:26	03/17/23 11:58	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		10 - 145	03/16/23 11:26	03/17/23 11:58	1
DCB Decachlorobiphenyl	70		10 - 145	03/16/23 11:26	03/17/23 11:58	1
Tetrachloro-m-xylene	57		10 - 123	03/16/23 11:26	03/17/23 11:58	1
Tetrachloro-m-xylene	54		10 - 123	03/16/23 11:26	03/17/23 11:58	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		60	30	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1221	ND		60	36	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1232	ND		60	25	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1242	ND		60	23	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1248	ND		60	20	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1254	ND		60	25	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1260	ND		60	25	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1262	ND		60	26	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1
Aroclor-1268	ND		60	19	ug/Kg	✱	03/16/23 08:44	03/16/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		10 - 149	03/16/23 08:44	03/16/23 18:56	1
DCB Decachlorobiphenyl	64		10 - 174	03/16/23 08:44	03/16/23 18:56	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 06:50	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 06:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	03/20/23 19:00	03/21/23 06:50	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	69	B	5.9	0.097	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,4,6,7,8-HpCDF	14	B	5.9	0.028	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,4,7,8-HxCDD	0.89	J B	5.9	0.025	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,4,7,8-HxCDF	2.2	J	5.9	0.047	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,4,7,8,9-HpCDF	1.5	J B	5.9	0.036	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,6,7,8-HxCDD	1.8	J B	5.9	0.024	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,6,7,8-HxCDF	1.5	J B	5.9	0.047	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,7,8-PeCDD	0.83	J I B	5.9	0.014	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,7,8-PeCDF	1.0	J I B	5.9	0.043	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,7,8,9-HxCDD	1.3	J B	5.9	0.023	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
1,2,3,7,8,9-HxCDF	0.49	J B	5.9	0.050	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
2,3,4,6,7,8-HxCDF	1.5	J B	5.9	0.045	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
2,3,4,7,8-PeCDF	2.3	J B	5.9	0.036	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
2,3,7,8-TCDD	0.15	J	1.2	0.0082	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
2,3,7,8-TCDF	0.51	J B	1.2	0.030	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
OCDD	680	B	12	0.062	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
OCDF	46	B	12	0.025	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
Total HxCDD	29	B	5.9	0.024	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
Total HxCDF	22	I B	5.9	0.047	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1
Total HpCDD	200	B	5.9	0.097	ng/Kg	✱	03/17/23 11:07	03/22/23 09:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	39	B	5.9	0.032	ng/Kg	☼	03/17/23 11:07	03/22/23 09:08	1
Total PeCDD	8.1	IB	5.9	0.014	ng/Kg	☼	03/17/23 11:07	03/22/23 09:08	1
Total PeCDF	23	IB	5.9	0.040	ng/Kg	☼	03/17/23 11:07	03/22/23 09:08	1
Total TCDD	6.2	IB	1.2	0.0082	ng/Kg	☼	03/17/23 11:07	03/22/23 09:08	1
Total TCDF	12	IB	1.2	0.030	ng/Kg	☼	03/17/23 11:07	03/22/23 09:08	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	88		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-OCDD	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-2,3,7,8-TCDF	90		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-2,3,7,8-TCDD	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-2,3,4,7,8-PeCDF	93		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-2,3,4,6,7,8-HxCDF	90		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,7,8,9-HxCDF	94		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,7,8,9-HxCDD	97		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,7,8-PeCDD	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,6,7,8-HxCDF	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,6,7,8-HxCDD	92		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,4,7,8,9-HpCDF	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,4,7,8-HxCDF	89		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,4,7,8-HxCDD	91		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,4,6,7,8-HpCDF	88		40 - 135				03/17/23 11:07	03/22/23 09:08	1
13C-1,2,3,4,6,7,8-HpCDD	92		40 - 135				03/17/23 11:07	03/22/23 09:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			03/15/23 14:34	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			03/15/23 14:34	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-181894-9	WC-S. TRK-WEST-08 (8-10)	91	80	104	79
240-181894-9	WC-S. TRK-WEST-08 (8-10)	108	94	113	104
240-181894-10	WC-S. TRK-WEST-09 (10-12)	110	89	111	101
240-181894-10	WC-S. TRK-WEST-09 (10-12)	90	81	102	84
240-181894-10	WC-S. TRK-WEST-09 (10-12)	109	94	114	105
240-181894-11	WC-S. TRK-WEST-10 (10-12)	110	88	113	103
240-181894-12	WC-S. TRK-WEST-11 (12-14)	89	79	97	80
240-181894-12	WC-S. TRK-WEST-11 (12-14)	109	94	114	103
240-181894-13	WC-S. TRK-WEST-12 (12-14)	91	79	95	77
240-181894-13	WC-S. TRK-WEST-12 (12-14)	105	93	112	106
240-181894-14	WC-S. TRK-WEST-13 (14-16)	89	79	97	78
240-181894-14	WC-S. TRK-WEST-13 (14-16)	107	93	112	105
240-181894-15	WC-S. TRK-WEST-14 (14-16)	107	92	110	102
240-181894-15	WC-S. TRK-WEST-14 (14-16)	96	80	88	78
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	108	96	112	98
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	103	87	89	81
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	112	99	115	101
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	95	82	86	77
LCS 240-565503/2-A	Lab Control Sample	114	97	118	98
LCS 240-565503/2-A	Lab Control Sample	92	86	101	84
MB 240-565503/1-A	Method Blank	113	91	116	104
MB 240-565503/1-A	Method Blank	90	85	104	89

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	95	98	95	101
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	101	99	100	96
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	94	96	96	97

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-181894-9	WC-S. TRK-WEST-08 (8-10)	52	40	32	35	42	32
240-181894-10	WC-S. TRK-WEST-09 (10-12)	53	47	33	42	47	34
240-181894-11	WC-S. TRK-WEST-10 (10-12)	49	40	24 S1-	0 S1-	36	0 S1-
240-181894-12	WC-S. TRK-WEST-11 (12-14)	47	45	43	39	43	35
240-181894-13	WC-S. TRK-WEST-12 (12-14)	46	33	33	33	43	21
240-181894-14	WC-S. TRK-WEST-13 (14-16)	84	82	69	78	78	60
240-181894-15	WC-S. TRK-WEST-14 (14-16)	43 S1-	44	23 S1-	0 S1-	33 S1-	0 S1-
LCS 240-565464/2-A	Lab Control Sample	96	76	74	69	78	65
MB 240-565464/1-A	Method Blank	106	67	76	54	83	34

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	116	62	71	69	93	90

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-565654/7-A	Lab Control Sample	74	73	61	69
MB 240-565654/6-A	Method Blank	72	73	52	59

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	71	70	57	54

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX1 (10-149)	DCBP1 (10-174)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	77	64
LCS 240-565605/2-A	Lab Control Sample	112	97
MB 240-565605/1-A	Method Blank	92	76

Surrogate Legend
 TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-355463/4-A	Lab Control Sample	61	66
MB 410-355463/3-A	Method Blank	63	67

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCPAA1 (26-136)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	60

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-565503/1-A
Matrix: Solid
Analysis Batch: 565699

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Acetone	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Benzene	ND		0.25	0.042	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Bromoform	ND		0.25	0.23	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloroform	ND		0.25	0.054	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Styrene	ND		0.25	0.052	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Toluene	ND		0.25	0.24	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/15/23 13:01	03/16/23 17:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565503/1-A

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		2.5	1.4	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		03/15/23 13:01	03/16/23 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		56 - 125				03/15/23 13:01	03/16/23 17:51	1
Dibromofluoromethane (Surr)	91		41 - 138				03/15/23 13:01	03/16/23 17:51	1
4-Bromofluorobenzene (Surr)	116		41 - 143				03/15/23 13:01	03/16/23 17:51	1
1,2-Dichloroethane-d4 (Surr)	104		58 - 125				03/15/23 13:01	03/16/23 17:51	1

Lab Sample ID: MB 240-565503/1-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Acetone	ND		1.0	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Benzene	ND		0.25	0.042	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Bromoform	ND		0.25	0.23	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloroform	ND		0.25	0.054	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/15/23 13:01	03/17/23 04:55	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565503/1-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565503

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Styrene	ND		0.25	0.052	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Toluene	ND		0.25	0.24	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Butyl acrylate	ND		2.5	1.4	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		03/15/23 13:01	03/17/23 04:55	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		03/15/23 13:01	03/17/23 04:55	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	90		56 - 125	03/15/23 13:01	03/17/23 04:55	1
Dibromofluoromethane (Surr)	85		41 - 138	03/15/23 13:01	03/17/23 04:55	1
4-Bromofluorobenzene (Surr)	104		41 - 143	03/15/23 13:01	03/17/23 04:55	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125	03/15/23 13:01	03/17/23 04:55	1

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.33		mg/Kg		107	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.30		mg/Kg		104	64 - 148
1,1,2-Trichloroethane	1.25	1.33		mg/Kg		106	79 - 120
1,1-Dichloroethane	1.25	1.27		mg/Kg		101	74 - 121
1,1-Dichloroethene	1.25	1.27		mg/Kg		101	68 - 141
1,2,4-Trichlorobenzene	1.25	1.31		mg/Kg		104	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	1.03		mg/Kg		83	52 - 133
Ethylene Dibromide	1.25	1.25		mg/Kg		100	80 - 121
1,2-Dichlorobenzene	1.25	1.37		mg/Kg		109	73 - 120
1,2-Dichloroethane	1.25	1.24		mg/Kg		99	71 - 123
1,2-Dichloropropane	1.25	1.20		mg/Kg		96	76 - 126
1,3-Dichlorobenzene	1.25	1.37		mg/Kg		109	73 - 120
1,4-Dichlorobenzene	1.25	1.40		mg/Kg		112	74 - 120
2-Butanone (MEK)	2.50	2.44		mg/Kg		97	63 - 142
2-Hexanone	2.50	2.54		mg/Kg		101	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.49		mg/Kg		99	62 - 142
Acetone	2.50	2.80		mg/Kg		112	58 - 160

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	1.25	1.32		mg/Kg		106	76 - 121
Dichlorobromomethane	1.25	1.14		mg/Kg		91	71 - 138
Bromoform	1.25	0.964		mg/Kg		77	57 - 140
Bromomethane	1.25	1.18		mg/Kg		94	10 - 171
Carbon disulfide	1.25	1.04		mg/Kg		83	43 - 152
Carbon tetrachloride	1.25	1.20		mg/Kg		96	64 - 144
Chlorobenzene	1.25	1.35		mg/Kg		108	80 - 120
Chloroethane	1.25	0.815		mg/Kg		65	11 - 164
Chloroform	1.25	1.31		mg/Kg		105	78 - 120
Chloromethane	1.25	1.26		mg/Kg		101	41 - 142
cis-1,2-Dichloroethene	1.25	1.28		mg/Kg		103	78 - 124
cis-1,3-Dichloropropene	1.25	1.17		mg/Kg		93	70 - 133
Cyclohexane	1.25	1.27		mg/Kg		101	65 - 137
Chlorodibromomethane	1.25	1.07		mg/Kg		85	68 - 131
Dichlorodifluoromethane	1.25	1.62		mg/Kg		129	21 - 150
Ethylbenzene	1.25	1.40		mg/Kg		112	80 - 120
Isopropylbenzene	1.25	1.46		mg/Kg		117	80 - 130
Methyl acetate	2.50	2.21		mg/Kg		89	60 - 133
Methyl tert-butyl ether	1.25	1.18		mg/Kg		95	70 - 130
Methylcyclohexane	1.25	1.37		mg/Kg		109	70 - 138
Methylene Chloride	1.25	1.37		mg/Kg		110	71 - 124
Styrene	1.25	1.39		mg/Kg		111	75 - 140
Tetrachloroethene	1.25	1.49		mg/Kg		119	76 - 127
Toluene	1.25	1.44		mg/Kg		115	80 - 120
trans-1,2-Dichloroethene	1.25	1.25		mg/Kg		100	76 - 130
trans-1,3-Dichloropropene	1.25	1.28		mg/Kg		102	61 - 121
Trichloroethene	1.25	1.29		mg/Kg		103	74 - 130
Trichlorofluoromethane	1.25	1.30		mg/Kg		104	50 - 154
Vinyl chloride	1.25	1.41		mg/Kg		113	49 - 146
Xylenes, Total	2.50	2.80		mg/Kg		112	80 - 122
m-Xylene & p-Xylene	1.25	1.42		mg/Kg		113	80 - 122
o-Xylene	1.25	1.38		mg/Kg		110	80 - 124
Butyl acrylate	5.00	4.79		mg/Kg		96	61 - 120
Methyl acrylate	5.00	4.86		mg/Kg		97	76 - 120
2-Ethylhexyl acrylate	5.00	4.43		mg/Kg		89	57 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	114		56 - 125
Dibromofluoromethane (Surr)	97		41 - 138
4-Bromofluorobenzene (Surr)	118		41 - 143
1,2-Dichloroethane-d4 (Surr)	98		58 - 125

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	1.25	1.11		mg/Kg		89	74 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,1,2,2-Tetrachloroethane	1.25	1.30		mg/Kg		104	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.04		mg/Kg		83	64 - 148
1,1,2-Trichloroethane	1.25	1.21		mg/Kg		97	79 - 120
1,1-Dichloroethane	1.25	1.10		mg/Kg		88	74 - 121
1,1-Dichloroethene	1.25	1.07		mg/Kg		86	68 - 141
1,2,4-Trichlorobenzene	1.25	1.12		mg/Kg		89	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	1.09		mg/Kg		87	52 - 133
Ethylene Dibromide	1.25	1.20		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	1.25	1.14		mg/Kg		91	73 - 120
1,2-Dichloroethane	1.25	1.24		mg/Kg		99	71 - 123
1,2-Dichloropropane	1.25	1.20		mg/Kg		96	76 - 126
1,3-Dichlorobenzene	1.25	1.12		mg/Kg		90	73 - 120
1,4-Dichlorobenzene	1.25	1.12		mg/Kg		90	74 - 120
2-Butanone (MEK)	2.50	2.62		mg/Kg		105	63 - 142
2-Hexanone	2.50	2.90		mg/Kg		116	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.66		mg/Kg		106	62 - 142
Acetone	2.50	3.42		mg/Kg		137	58 - 160
Benzene	1.25	1.15		mg/Kg		92	76 - 121
Dichlorobromomethane	1.25	1.14		mg/Kg		92	71 - 138
Bromoform	1.25	1.02		mg/Kg		81	57 - 140
Bromomethane	1.25	0.740		mg/Kg		59	10 - 171
Carbon disulfide	1.25	0.926		mg/Kg		74	43 - 152
Carbon tetrachloride	1.25	1.04		mg/Kg		83	64 - 144
Chlorobenzene	1.25	1.13		mg/Kg		90	80 - 120
Chloroethane	1.25	0.711		mg/Kg		57	11 - 164
Chloroform	1.25	1.15		mg/Kg		92	78 - 120
Chloromethane	1.25	1.06		mg/Kg		85	41 - 142
cis-1,2-Dichloroethene	1.25	1.12		mg/Kg		90	78 - 124
cis-1,3-Dichloropropene	1.25	1.16		mg/Kg		93	70 - 133
Cyclohexane	1.25	1.13		mg/Kg		90	65 - 137
Chlorodibromomethane	1.25	1.10		mg/Kg		88	68 - 131
Dichlorodifluoromethane	1.25	0.878		mg/Kg		70	21 - 150
Ethylbenzene	1.25	1.18		mg/Kg		94	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		97	80 - 130
Methyl acetate	2.50	2.67		mg/Kg		107	60 - 133
Methyl tert-butyl ether	1.25	1.24		mg/Kg		99	70 - 130
Methylcyclohexane	1.25	1.10		mg/Kg		88	70 - 138
Methylene Chloride	1.25	1.14		mg/Kg		91	71 - 124
Styrene	1.25	1.19		mg/Kg		95	75 - 140
Tetrachloroethene	1.25	1.10		mg/Kg		88	76 - 127
Toluene	1.25	1.12		mg/Kg		90	80 - 120
trans-1,2-Dichloroethene	1.25	1.08		mg/Kg		87	76 - 130
trans-1,3-Dichloropropene	1.25	1.12		mg/Kg		89	61 - 121
Trichloroethene	1.25	1.08		mg/Kg		86	74 - 130
Trichlorofluoromethane	1.25	0.976		mg/Kg		78	50 - 154
Vinyl chloride	1.25	1.04		mg/Kg		83	49 - 146
Xylenes, Total	2.50	2.40		mg/Kg		96	80 - 122
m-Xylene & p-Xylene	1.25	1.20		mg/Kg		96	80 - 122

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565503/2-A

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	1.25	1.20		mg/Kg		96	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	92		56 - 125
Dibromofluoromethane (Surr)	86		41 - 138
4-Bromofluorobenzene (Surr)	101		41 - 143
1,2-Dichloroethane-d4 (Surr)	84		58 - 125

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	340		686	1140		mg/Kg	⊛	116	10 - 150
Methyl acrylate	ND		686	782		mg/Kg	⊛	114	10 - 150
2-Ethylhexyl acrylate	720		686	1470		mg/Kg	⊛	109	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	108		56 - 125
Dibromofluoromethane (Surr)	96		41 - 138
4-Bromofluorobenzene (Surr)	112		41 - 143
1,2-Dichloroethane-d4 (Surr)	98		58 - 125

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		1.71	1.67		mg/Kg	⊛	97	46 - 144
1,1,1,2-Tetrachloroethane	ND		1.71	1.48		mg/Kg	⊛	86	26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.71	1.62		mg/Kg	⊛	94	35 - 164
1,1,2-Trichloroethane	ND		1.71	1.68		mg/Kg	⊛	98	26 - 149
1,1-Dichloroethane	ND		1.71	1.66		mg/Kg	⊛	97	46 - 135
1,1-Dichloroethene	ND		1.71	1.72		mg/Kg	⊛	100	44 - 160
1,2,4-Trichlorobenzene	ND		1.71	1.57		mg/Kg	⊛	92	10 - 120
1,2-Dibromo-3-Chloropropane	ND		1.71	1.64		mg/Kg	⊛	96	12 - 144
Ethylene Dibromide	ND		1.71	1.79		mg/Kg	⊛	104	31 - 142
1,2-Dichlorobenzene	ND		1.71	1.66		mg/Kg	⊛	97	10 - 126
1,2-Dichloroethane	ND		1.71	1.66		mg/Kg	⊛	97	40 - 132
1,2-Dichloropropane	ND		1.71	1.71		mg/Kg	⊛	100	45 - 133
1,3-Dichlorobenzene	ND		1.71	1.56		mg/Kg	⊛	91	10 - 131
1,4-Dichlorobenzene	ND		1.71	1.56		mg/Kg	⊛	91	10 - 129
2-Butanone (MEK)	ND		3.43	3.32		mg/Kg	⊛	97	30 - 157
2-Hexanone	ND		3.43	4.92		mg/Kg	⊛	143	20 - 166
4-Methyl-2-pentanone (MIBK)	ND		3.43	4.48		mg/Kg	⊛	131	31 - 159
Acetone	0.35	J	3.43	3.95		mg/Kg	⊛	105	35 - 167
Benzene	0.068	J	1.71	1.78		mg/Kg	⊛	100	39 - 134

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MS

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Dichlorobromomethane	ND		1.71	1.49		mg/Kg	⊛	87	32 - 146	
Bromoform	ND		1.71	1.41		mg/Kg	⊛	82	12 - 144	
Bromomethane	ND		1.71	1.39		mg/Kg	⊛	81	10 - 161	
Carbon disulfide	ND		1.71	1.42		mg/Kg	⊛	83	24 - 153	
Carbon tetrachloride	ND		1.71	1.56		mg/Kg	⊛	91	37 - 145	
Chlorobenzene	ND		1.71	1.65		mg/Kg	⊛	96	18 - 134	
Chloroethane	ND		1.71	1.31		mg/Kg	⊛	76	14 - 159	
Chloroform	ND		1.71	1.65		mg/Kg	⊛	96	43 - 134	
Chloromethane	ND		1.71	1.63		mg/Kg	⊛	95	32 - 151	
cis-1,2-Dichloroethene	ND		1.71	1.68		mg/Kg	⊛	98	48 - 132	
cis-1,3-Dichloropropene	ND		1.71	1.56		mg/Kg	⊛	91	23 - 139	
Cyclohexane	ND		1.71	1.89		mg/Kg	⊛	110	31 - 147	
Chlorodibromomethane	ND		1.71	1.48		mg/Kg	⊛	86	25 - 143	
Dichlorodifluoromethane	ND		1.71	1.34		mg/Kg	⊛	78	16 - 157	
Ethylbenzene	ND		1.71	1.78		mg/Kg	⊛	104	17 - 137	
Isopropylbenzene	0.059	J	1.71	1.84		mg/Kg	⊛	104	10 - 146	
Methyl acetate	ND		3.43	4.06		mg/Kg	⊛	118	13 - 164	
Methyl tert-butyl ether	ND		1.71	1.84		mg/Kg	⊛	107	55 - 134	
Methylcyclohexane	0.71		1.71	2.40		mg/Kg	⊛	98	20 - 153	
Methylene Chloride	ND		1.71	1.56		mg/Kg	⊛	91	38 - 145	
Styrene	ND		1.71	1.82		mg/Kg	⊛	106	10 - 149	
Tetrachloroethene	ND		1.71	1.76		mg/Kg	⊛	102	19 - 147	
Toluene	ND		1.71	1.94		mg/Kg	⊛	113	30 - 137	
trans-1,2-Dichloroethene	ND		1.71	1.71		mg/Kg	⊛	100	41 - 145	
trans-1,3-Dichloropropene	ND		1.71	1.62		mg/Kg	⊛	95	19 - 130	
Trichloroethene	ND		1.71	1.81		mg/Kg	⊛	105	21 - 158	
Trichlorofluoromethane	ND		1.71	1.50		mg/Kg	⊛	88	36 - 161	
Vinyl chloride	0.25	J	1.71	1.80		mg/Kg	⊛	90	32 - 163	
Xylenes, Total	0.55	J	3.43	4.04		mg/Kg	⊛	102	17 - 138	
m-Xylene & p-Xylene	0.28	J	1.71	2.11		mg/Kg	⊛	107	10 - 141	
o-Xylene	0.27	J	1.71	1.93		mg/Kg	⊛	97	18 - 139	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	103		56 - 125
Dibromofluoromethane (Surr)	87		41 - 138
4-Bromofluorobenzene (Surr)	89		41 - 143
1,2-Dichloroethane-d4 (Surr)	81		58 - 125

Lab Sample ID: 240-181894-15 MSD

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
Butyl acrylate	340		686	1100		mg/Kg	⊛	111	10 - 150	3	30	
Methyl acrylate	ND		686	753		mg/Kg	⊛	110	10 - 150	4	30	
2-Ethylhexyl acrylate	720		686	1440		mg/Kg	⊛	105	10 - 150	2	30	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MSD

Matrix: Solid

Analysis Batch: 565699

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	112		56 - 125
Dibromofluoromethane (Surr)	99		41 - 138
4-Bromofluorobenzene (Surr)	115		41 - 143
1,2-Dichloroethane-d4 (Surr)	101		58 - 125

Lab Sample ID: 240-181894-15 MSD

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec		RPD
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
1,1,1-Trichloroethane	ND		1.71	1.67		mg/Kg	☼	97	46 - 144	0	37
1,1,2,2-Tetrachloroethane	ND		1.71	1.64		mg/Kg	☼	96	26 - 159	10	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.71	1.58		mg/Kg	☼	92	35 - 164	2	37
1,1,2-Trichloroethane	ND		1.71	1.69		mg/Kg	☼	99	26 - 149	0	40
1,1-Dichloroethane	ND		1.71	1.51		mg/Kg	☼	88	46 - 135	9	36
1,1-Dichloroethene	ND		1.71	1.60		mg/Kg	☼	93	44 - 160	7	37
1,2,4-Trichlorobenzene	ND		1.71	1.55		mg/Kg	☼	91	10 - 120	1	40
1,2-Dibromo-3-Chloropropane	ND		1.71	1.79		mg/Kg	☼	104	12 - 144	9	40
Ethylene Dibromide	ND		1.71	1.73		mg/Kg	☼	101	31 - 142	3	40
1,2-Dichlorobenzene	ND		1.71	1.62		mg/Kg	☼	94	10 - 126	2	40
1,2-Dichloroethane	ND		1.71	1.61		mg/Kg	☼	94	40 - 132	3	35
1,2-Dichloropropane	ND		1.71	1.64		mg/Kg	☼	96	45 - 133	4	37
1,3-Dichlorobenzene	ND		1.71	1.51		mg/Kg	☼	88	10 - 131	3	40
1,4-Dichlorobenzene	ND		1.71	1.52		mg/Kg	☼	88	10 - 129	3	40
2-Butanone (MEK)	ND		3.43	3.75		mg/Kg	☼	109	30 - 157	12	40
2-Hexanone	ND		3.43	4.89		mg/Kg	☼	143	20 - 166	1	40
4-Methyl-2-pentanone (MIBK)	ND		3.43	4.26		mg/Kg	☼	124	31 - 159	5	40
Acetone	0.35 J		3.43	4.54		mg/Kg	☼	122	35 - 167	14	40
Benzene	0.068 J		1.71	1.72		mg/Kg	☼	97	39 - 134	3	40
Dichlorobromomethane	ND		1.71	1.43		mg/Kg	☼	83	32 - 146	4	39
Bromoform	ND		1.71	1.43		mg/Kg	☼	84	12 - 144	2	40
Bromomethane	ND		1.71	1.28		mg/Kg	☼	75	10 - 161	8	40
Carbon disulfide	ND		1.71	1.34		mg/Kg	☼	78	24 - 153	6	40
Carbon tetrachloride	ND		1.71	1.54		mg/Kg	☼	90	37 - 145	1	38
Chlorobenzene	ND		1.71	1.60		mg/Kg	☼	93	18 - 134	3	40
Chloroethane	ND		1.71	1.29		mg/Kg	☼	75	14 - 159	1	40
Chloroform	ND		1.71	1.60		mg/Kg	☼	94	43 - 134	3	36
Chloromethane	ND		1.71	1.68		mg/Kg	☼	98	32 - 151	3	38
cis-1,2-Dichloroethene	ND		1.71	1.63		mg/Kg	☼	95	48 - 132	3	37
cis-1,3-Dichloropropene	ND		1.71	1.54		mg/Kg	☼	90	23 - 139	1	39
Cyclohexane	ND		1.71	1.87		mg/Kg	☼	109	31 - 147	1	39
Chlorodibromomethane	ND		1.71	1.40		mg/Kg	☼	81	25 - 143	6	40
Dichlorodifluoromethane	ND		1.71	1.39		mg/Kg	☼	81	16 - 157	4	40
Ethylbenzene	ND		1.71	1.76		mg/Kg	☼	103	17 - 137	1	40
Isopropylbenzene	0.059 J		1.71	1.86		mg/Kg	☼	105	10 - 146	1	40
Methyl acetate	ND		3.43	3.76		mg/Kg	☼	110	13 - 164	8	40
Methyl tert-butyl ether	ND		1.71	1.66		mg/Kg	☼	97	55 - 134	10	37
Methylcyclohexane	0.71		1.71	2.43		mg/Kg	☼	100	20 - 153	1	40

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-15 MSD

Matrix: Solid

Analysis Batch: 565727

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Prep Type: Total/NA

Prep Batch: 565503

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Methylene Chloride	ND		1.71	1.40		mg/Kg	☼	82	38 - 145	11	40
Styrene	ND		1.71	1.79		mg/Kg	☼	105	10 - 149	1	40
Tetrachloroethene	ND		1.71	1.74		mg/Kg	☼	102	19 - 147	1	40
Toluene	ND		1.71	1.87		mg/Kg	☼	109	30 - 137	3	40
trans-1,2-Dichloroethene	ND		1.71	1.55		mg/Kg	☼	91	41 - 145	10	37
trans-1,3-Dichloropropene	ND		1.71	1.55		mg/Kg	☼	90	19 - 130	5	40
Trichloroethene	ND		1.71	1.67		mg/Kg	☼	98	21 - 158	8	40
Trichlorofluoromethane	ND		1.71	1.55		mg/Kg	☼	90	36 - 161	3	40
Vinyl chloride	0.25	J	1.71	1.85		mg/Kg	☼	93	32 - 163	3	38
Xylenes, Total	0.55	J	3.43	3.84		mg/Kg	☼	96	17 - 138	5	40
m-Xylene & p-Xylene	0.28	J	1.71	1.98		mg/Kg	☼	99	10 - 141	6	40
o-Xylene	0.27	J	1.71	1.86		mg/Kg	☼	93	18 - 139	4	40

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		56 - 125
Dibromofluoromethane (Surr)	82		41 - 138
4-Bromofluorobenzene (Surr)	86		41 - 143
1,2-Dichloroethane-d4 (Surr)	77		58 - 125

Lab Sample ID: 240-181894-16 MS

Matrix: Solid

Analysis Batch: 565827

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Prep Type: TCLP

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1-Dichloroethene	ND		1.00	0.981		mg/L		98	72 - 127		
1,2-Dichloroethane	ND		1.00	0.896		mg/L		90	70 - 120		
2-Butanone (MEK)	0.027	J B	2.00	2.24		mg/L		111	76 - 127		
Benzene	ND		1.00	0.994		mg/L		99	80 - 124		
Carbon tetrachloride	ND		1.00	0.848		mg/L		85	63 - 120		
Chlorobenzene	ND		1.00	0.958		mg/L		96	80 - 120		
Chloroform	ND		1.00	0.947		mg/L		95	75 - 121		
Tetrachloroethene	ND		1.00	0.980		mg/L		98	68 - 120		
Trichloroethene	ND		1.00	1.01		mg/L		101	70 - 120		
Vinyl chloride	0.0075	J F2	1.00	0.835		mg/L		83	55 - 144		

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	99		71 - 121
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		76 - 120

Lab Sample ID: 240-181894-16 MSD

Matrix: Solid

Analysis Batch: 565827

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1-Dichloroethene	ND		1.00	1.02		mg/L		102	72 - 127	4	11
1,2-Dichloroethane	ND		1.00	0.983		mg/L		98	70 - 120	9	10

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181894-16 MSD

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Matrix: Solid

Prep Type: TCLP

Analysis Batch: 565827

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
2-Butanone (MEK)	0.027	J B	2.00	2.43		mg/L		120	76 - 127	8	17
Benzene	ND		1.00	1.03		mg/L		103	80 - 124	4	10
Carbon tetrachloride	ND		1.00	0.914		mg/L		91	63 - 120	7	11
Chlorobenzene	ND		1.00	0.999		mg/L		100	80 - 120	4	10
Chloroform	ND		1.00	1.00		mg/L		100	75 - 121	5	10
Tetrachloroethene	ND		1.00	1.01		mg/L		101	68 - 120	3	10
Trichloroethene	ND		1.00	0.956		mg/L		96	70 - 120	6	10
Vinyl chloride	0.0075	J F2	1.00	0.697	F2	mg/L		69	55 - 144	18	11

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	96		71 - 121
4-Bromofluorobenzene (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		76 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-565464/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 565783

Prep Batch: 565464

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-565464/1-A

Matrix: Solid

Analysis Batch: 565783

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565464

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Anthracene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Atrazine	ND		0.20	0.036	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Carbazole	ND		0.050	0.019	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Isophorone	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Phenol	ND		0.050	0.0080	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/15/23 09:31	03/17/23 12:41	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		03/15/23 09:31	03/17/23 12:41	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	106		46 - 137	03/15/23 09:31	03/17/23 12:41	1
Phenol-d5 (Surr)	67		26 - 120	03/15/23 09:31	03/17/23 12:41	1
Nitrobenzene-d5 (Surr)	76		25 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorophenol (Surr)	54		20 - 120	03/15/23 09:31	03/17/23 12:41	1
2-Fluorobiphenyl (Surr)	83		34 - 120	03/15/23 09:31	03/17/23 12:41	1
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/15/23 09:31	03/17/23 12:41	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A

Matrix: Solid

Analysis Batch: 566020

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.667	0.469		mg/Kg		70	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.452		mg/Kg		68	38 - 120
2,4,5-Trichlorophenol	0.667	0.457		mg/Kg		69	50 - 120
2,4,6-Trichlorophenol	0.667	0.473		mg/Kg		71	50 - 120
2,4-Dichlorophenol	0.667	0.480		mg/Kg		72	50 - 120
2,4-Dimethylphenol	0.667	0.426		mg/Kg		64	24 - 120
2,4-Dinitrophenol	1.33	0.840		mg/Kg		63	19 - 132
2,4-Dinitrotoluene	0.667	0.551		mg/Kg		83	64 - 120
2,6-Dinitrotoluene	0.667	0.525		mg/Kg		79	62 - 120
2-Chloronaphthalene	0.667	0.496		mg/Kg		74	51 - 120
2-Chlorophenol	0.667	0.445		mg/Kg		67	47 - 120
2-Methylnaphthalene	0.667	0.457		mg/Kg		69	38 - 120
2-Methylphenol	0.667	0.470		mg/Kg		70	45 - 120
2-Nitroaniline	0.667	0.574		mg/Kg		86	57 - 120
2-Nitrophenol	0.667	0.476		mg/Kg		71	51 - 120
3,3'-Dichlorobenzidine	1.33	0.873		mg/Kg		65	27 - 199
3-Nitroaniline	0.667	0.478		mg/Kg		72	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.03		mg/Kg		77	46 - 126
4-Bromophenyl phenyl ether	0.667	0.528		mg/Kg		79	65 - 120
4-Chloro-3-methylphenol	0.667	0.513		mg/Kg		77	51 - 120
4-Chloroaniline	0.667	0.370		mg/Kg		55	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.506		mg/Kg		76	59 - 120
4-Nitroaniline	0.667	0.516		mg/Kg		77	48 - 128
4-Nitrophenol	1.33	1.15		mg/Kg		86	43 - 120
Acenaphthene	0.667	0.520		mg/Kg		78	52 - 120
Acenaphthylene	0.667	0.479		mg/Kg		72	52 - 120
Acetophenone	0.667	0.461		mg/Kg		69	47 - 120
Anthracene	0.667	0.537		mg/Kg		81	64 - 120
Atrazine	1.33	1.25		mg/Kg		93	71 - 125
Benzaldehyde	1.33	0.941		mg/Kg		71	42 - 120
Benzo[a]anthracene	0.667	0.564		mg/Kg		85	70 - 120
Benzo[a]pyrene	0.667	0.506		mg/Kg		76	63 - 125
Benzo[b]fluoranthene	0.667	0.546		mg/Kg		82	64 - 121
Benzo[g,h,i]perylene	0.667	0.496		mg/Kg		74	62 - 120
Benzo[k]fluoranthene	0.667	0.528		mg/Kg		79	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.475		mg/Kg		71	50 - 120
Bis(2-chloroethyl)ether	0.667	0.465		mg/Kg		70	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.603		mg/Kg		90	63 - 133
Butyl benzyl phthalate	0.667	0.604		mg/Kg		91	66 - 127
Caprolactam	1.33	1.11		mg/Kg		83	67 - 120
Carbazole	0.667	0.563		mg/Kg		84	61 - 129
Chrysene	0.667	0.549		mg/Kg		82	67 - 120
Dibenz(a,h)anthracene	0.667	0.495		mg/Kg		74	62 - 120
Dibenzofuran	0.667	0.505		mg/Kg		76	55 - 120
Diethyl phthalate	0.667	0.549		mg/Kg		82	61 - 120
Dimethyl phthalate	0.667	0.562		mg/Kg		84	64 - 120
Di-n-butyl phthalate	0.667	0.587		mg/Kg		88	70 - 129
Di-n-octyl phthalate	0.667	0.588		mg/Kg		88	64 - 129

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565464/2-A

Matrix: Solid

Analysis Batch: 566020

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565464

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Fluoranthene	0.667	0.561		mg/Kg		84	71 - 124	
Fluorene	0.667	0.522		mg/Kg		78	58 - 120	
Hexachlorobenzene	0.667	0.498		mg/Kg		75	59 - 120	
Hexachlorobutadiene	0.667	0.462		mg/Kg		69	45 - 120	
Hexachlorocyclopentadiene	0.667	0.197	J	mg/Kg		30	10 - 120	
Hexachloroethane	0.667	0.399		mg/Kg		60	39 - 120	
Indeno[1,2,3-cd]pyrene	0.667	0.515		mg/Kg		77	65 - 122	
Isophorone	0.667	0.476		mg/Kg		71	50 - 120	
N-Nitrosodi-n-propylamine	0.667	0.465		mg/Kg		70	48 - 120	
N-Nitrosodiphenylamine	0.667	0.526		mg/Kg		79	64 - 120	
Naphthalene	0.667	0.463		mg/Kg		69	34 - 120	
Nitrobenzene	0.667	0.479		mg/Kg		72	48 - 120	
Pentachlorophenol	1.33	0.634		mg/Kg		48	10 - 120	
Phenanthrene	0.667	0.530		mg/Kg		79	60 - 120	
Phenol	0.667	0.485		mg/Kg		73	48 - 120	
Pyrene	0.667	0.568		mg/Kg		85	67 - 120	
3 & 4 Methylphenol	0.667	0.466		mg/Kg		70	49 - 120	
2-Butoxyethanol	0.667	0.419		mg/Kg		63	10 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	96		46 - 137
Phenol-d5 (Surr)	76		26 - 120
Nitrobenzene-d5 (Surr)	74		25 - 120
2-Fluorophenol (Surr)	69		20 - 120
2-Fluorobiphenyl (Surr)	78		34 - 120
2,4,6-Tribromophenol (Surr)	65		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-565654/6-A

Matrix: Solid

Analysis Batch: 565762

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565654

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/16/23 11:26	03/17/23 11:11	1
Endrin	ND		0.00050	0.0000065	mg/L		03/16/23 11:26	03/17/23 11:11	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/16/23 11:26	03/17/23 11:11	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/16/23 11:26	03/17/23 11:11	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/16/23 11:26	03/17/23 11:11	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/16/23 11:26	03/17/23 11:11	1
Toxaphene	ND		0.020	0.000058	mg/L		03/16/23 11:26	03/17/23 11:11	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	72		10 - 145	03/16/23 11:26	03/17/23 11:11	1
DCB Decachlorobiphenyl	73		10 - 145	03/16/23 11:26	03/17/23 11:11	1
Tetrachloro-m-xylene	52		10 - 123	03/16/23 11:26	03/17/23 11:11	1
Tetrachloro-m-xylene	59		10 - 123	03/16/23 11:26	03/17/23 11:11	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-565654/7-A

Matrix: Solid

Analysis Batch: 565762

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endrin	0.00100	0.000863		mg/L		86	36 - 120
Heptachlor	0.00100	0.000788		mg/L		79	29 - 120
Heptachlor epoxide	0.00100	0.000806		mg/L		81	36 - 120
gamma-BHC (Lindane)	0.00100	0.000792		mg/L		79	23 - 120
Methoxychlor	0.00100	0.00106		mg/L		106	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	74		10 - 145
DCB Decachlorobiphenyl	73		10 - 145
Tetrachloro-m-xylene	61		10 - 123
Tetrachloro-m-xylene	69		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-565605/1-A

Matrix: Solid

Analysis Batch: 565569

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 565605

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1221	ND		50	30	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1232	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1242	ND		50	19	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1248	ND		50	17	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1254	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1260	ND		50	21	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1262	ND		50	22	ug/Kg		03/16/23 08:44	03/16/23 17:38	1
Aroclor-1268	ND		50	16	ug/Kg		03/16/23 08:44	03/16/23 17:38	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	92		10 - 149	03/16/23 08:44	03/16/23 17:38	1
DCB Decachlorobiphenyl	76		10 - 174	03/16/23 08:44	03/16/23 17:38	1

Lab Sample ID: LCS 240-565605/2-A

Matrix: Solid

Analysis Batch: 565569

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 565605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	908		ug/Kg		91	28 - 140
Aroclor-1260	1000	906		ug/Kg		91	39 - 153

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	112		10 - 149
DCB Decachlorobiphenyl	97		10 - 174

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-355463/3-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355463

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/20/23 19:00	03/21/23 05:26	1
2,4-D	ND		0.050	0.016	mg/L		03/20/23 19:00	03/21/23 05:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136				03/20/23 19:00	03/21/23 05:26	1
2,4-Dichlorophenylacetic acid (Surr)	67		26 - 136				03/20/23 19:00	03/21/23 05:26	1

Lab Sample ID: LCS 410-355463/4-A
Matrix: Solid
Analysis Batch: 355545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355463

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Silvex (2,4,5-TP)	0.00500	0.00337	J	mg/L		67	58 - 148
2,4-D	0.0502	0.0304	J	mg/L		61	42 - 147
Surrogate	%Recovery	Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136				
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136				

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-354736/1-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354736

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	0.109	J I	5.0	0.011	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,6,7,8-HpCDF	0.0245	J I	5.0	0.0017	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8-HxCDD	0.0330	J	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8-HxCDF	ND		5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,4,7,8,9-HpCDF	0.0247	J I	5.0	0.0024	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,6,7,8-HxCDD	0.0232	J I	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,6,7,8-HxCDF	0.0121	J I	5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8-PeCDD	0.0346	J I	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8-PeCDF	0.0550	J I	5.0	0.0075	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8,9-HxCDD	0.0272	J I	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
1,2,3,7,8,9-HxCDF	0.0470	J I	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,4,6,7,8-HxCDF	0.0531	J I	5.0	0.0030	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,4,7,8-PeCDF	0.0437	J I	5.0	0.0055	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,7,8-TCDD	ND		1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
2,3,7,8-TCDF	0.00755	J	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
OCDD	0.270	J	10	0.0091	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
OCDF	0.0892	J	10	0.0024	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HxCDD	0.218	J I	5.0	0.0026	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HxCDF	0.135	J I	5.0	0.0031	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HpCDD	0.109	J I	5.0	0.011	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total HpCDF	0.0493	J I	5.0	0.0020	ng/Kg		03/17/23 11:07	03/21/23 02:11	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-354736/1-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354736

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total PeCDD	0.0997	J I	5.0	0.0034	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total PeCDF	0.115	J I	5.0	0.0065	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total TCDD	0.0236	J	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1
Total TCDF	0.0277	J I	1.0	0.0040	ng/Kg		03/17/23 11:07	03/21/23 02:11	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-OCDF	98		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-OCDD	99		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,7,8-TCDF	86		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,7,8-TCDD	86		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,4,7,8-PeCDF	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-2,3,4,6,7,8-HxCDF	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8,9-HxCDF	97		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8,9-HxCDD	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8-PeCDF	89		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,7,8-PeCDD	85		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,6,7,8-HxCDF	100		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,6,7,8-HxCDD	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8,9-HpCDF	94		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8-HxCDF	93		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,7,8-HxCDD	92		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,6,7,8-HpCDF	96		40 - 135	03/17/23 11:07	03/21/23 02:11	1
13C-1,2,3,4,6,7,8-HpCDD	96		40 - 135	03/17/23 11:07	03/21/23 02:11	1

Lab Sample ID: LCS 410-354736/2-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354736

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,6,7,8-HpCDF	100	89.4		ng/Kg		89	77 - 127
1,2,3,4,7,8-HxCDD	100	97.2		ng/Kg		97	77 - 127
1,2,3,4,7,8-HxCDF	100	95.3		ng/Kg		95	77 - 129
1,2,3,4,7,8,9-HpCDF	100	94.7		ng/Kg		95	77 - 127
1,2,3,6,7,8-HxCDD	100	97.3		ng/Kg		97	76 - 127
1,2,3,6,7,8-HxCDF	100	93.1		ng/Kg		93	77 - 129
1,2,3,7,8-PeCDD	100	102		ng/Kg		102	77 - 127
1,2,3,7,8-PeCDF	100	97.8		ng/Kg		98	75 - 129
1,2,3,7,8,9-HxCDD	100	99.3		ng/Kg		99	76 - 127
1,2,3,7,8,9-HxCDF	100	94.2		ng/Kg		94	76 - 126
2,3,4,6,7,8-HxCDF	100	93.0		ng/Kg		93	78 - 128
2,3,4,7,8-PeCDF	100	98.4		ng/Kg		98	75 - 131
2,3,7,8-TCDD	20.0	18.4		ng/Kg		92	68 - 142
2,3,7,8-TCDF	20.0	19.3		ng/Kg		96	70 - 133
OCDD	200	189		ng/Kg		95	77 - 125
OCDF	200	188		ng/Kg		94	75 - 128

Isotope Dilution	LCS	LCS	Limits
	%Recovery	Qualifier	
13C-OCDF	85		40 - 135

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-354736/2-A
Matrix: Solid
Analysis Batch: 355523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354736

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-OCDD	87		40 - 135
13C-2,3,7,8-TCDF	79		40 - 135
13C-2,3,7,8-TCDD	78		40 - 135
13C-2,3,4,7,8-PeCDF	85		40 - 135
13C-2,3,4,6,7,8-HxCDF	84		40 - 135
13C-1,2,3,7,8,9-HxCDF	83		40 - 135
13C-1,2,3,7,8,9-HxCDD	84		40 - 135
13C-1,2,3,7,8-PeCDD	81		40 - 135
13C-1,2,3,7,8-HxCDD	78		40 - 135
13C-1,2,3,6,7,8-HxCDF	88		40 - 135
13C-1,2,3,6,7,8-HxCDD	82		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	82		40 - 135
13C-1,2,3,4,7,8-HxCDF	85		40 - 135
13C-1,2,3,4,7,8-HxCDD	81		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	84		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	85		40 - 135

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-565630/2-A
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565630

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 19:01	1
Barium	ND		0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 19:01	1
Cadmium	ND		0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 19:01	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 19:01	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 19:01	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 19:01	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 19:01	1

Lab Sample ID: LCS 240-565630/3-A
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565630

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	2.00	2.09		mg/L		105	50 - 150
Barium	2.00	1.93		mg/L		97	50 - 150
Cadmium	1.00	1.03		mg/L		103	50 - 150
Chromium	1.00	0.950		mg/L		95	50 - 150
Lead	1.00	0.951		mg/L		95	50 - 150
Selenium	2.00	2.10		mg/L		105	50 - 150
Silver	0.100	0.101		mg/L		101	50 - 150

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LB 240-565526/1-B
Matrix: Solid
Analysis Batch: 565882

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565630

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.00596	J	0.050	0.0041	mg/L		03/16/23 14:00	03/17/23 18:57	1
Barium	0.00179	J	0.50	0.0013	mg/L		03/16/23 14:00	03/17/23 18:57	1
Cadmium	ND		0.050	0.00020	mg/L		03/16/23 14:00	03/17/23 18:57	1
Chromium	ND		0.050	0.0040	mg/L		03/16/23 14:00	03/17/23 18:57	1
Lead	ND		0.050	0.0028	mg/L		03/16/23 14:00	03/17/23 18:57	1
Selenium	ND		0.050	0.0060	mg/L		03/16/23 14:00	03/17/23 18:57	1
Silver	ND		0.050	0.00062	mg/L		03/16/23 14:00	03/17/23 18:57	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-565632/2-A
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565632

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:25	1

Lab Sample ID: LCS 240-565632/3-A
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565632

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.00500	0.00518		mg/L		104	80 - 120

Lab Sample ID: LB 240-565526/1-C
Matrix: Solid
Analysis Batch: 566117

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 565632

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/16/23 14:00	03/20/23 14:23	1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-181894-15 DU
Matrix: Solid
Analysis Batch: 565507

Client Sample ID: WC-S. TRK-WEST-14 (14-16)
Prep Type: Total/NA

Analyte	Sample Sample		DU DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	77.5		77.4		%		0.3	20
Percent Moisture	22.5		22.6		%		0.9	20

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS VOA

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Prep Batch: 565503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	5035	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	5035	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	5035	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	5035	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	5035	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	5035	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	
MB 240-565503/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	5035	

Leach Batch: 565528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Analysis Batch: 565699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	8260D	565503
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
MB 240-565503/1-A	Method Blank	Total/NA	Solid	8260D	565503
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	8260D	565503
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503

Analysis Batch: 565727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8260D	565503
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8260D	565503
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8260D	565503
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
MB 240-565503/1-A	Method Blank	Total/NA	Solid	8260D	565503
LCS 240-565503/2-A	Lab Control Sample	Total/NA	Solid	8260D	565503
240-181894-15 MS	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503
240-181894-15 MSD	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8260D	565503

Analysis Batch: 565827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528
240-181894-16 MS	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS VOA (Continued)

Analysis Batch: 565827 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16 MSD	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8260D	565528

Analysis Batch: 565878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8260D	565503
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8260D	565503
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8260D	565503
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8260D	565503
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8260D	565503

GC/MS Semi VOA

Prep Batch: 565464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	3540C	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	3540C	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	3540C	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	3540C	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	3540C	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	3540C	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	3540C	
MB 240-565464/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	3540C	

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Leach Batch: 565516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Prep Batch: 565653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	3510C	565516

Analysis Batch: 565783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	8270E	565464
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	8270E	565464
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	8270E	565464
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	8270E	565464
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	8270E	565464
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	8270E	565464
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	8270E	565464
MB 240-565464/1-A	Method Blank	Total/NA	Solid	8270E	565464

Analysis Batch: 565910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8270E	565653

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

GC/MS Semi VOA

Analysis Batch: 566020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-565464/2-A	Lab Control Sample	Total/NA	Solid	8270E	565464

GC Semi VOA

Leach Batch: 354756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	

Prep Batch: 355463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8151A	354756
MB 410-355463/3-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-355463/4-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 355545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8151A	355463
MB 410-355463/3-A	Method Blank	Total/NA	Solid	8151A	355463
LCS 410-355463/4-A	Lab Control Sample	Total/NA	Solid	8151A	355463

Composite Batch: 565477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Composite	

Composite Batch: 565478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	Composite	

Leach Batch: 565516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	1311	565478

Analysis Batch: 565569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	8082A	565605
MB 240-565605/1-A	Method Blank	Total/NA	Solid	8082A	565605
LCS 240-565605/2-A	Lab Control Sample	Total/NA	Solid	8082A	565605

Prep Batch: 565605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	3546	565477
MB 240-565605/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-565605/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 565654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	3510C	565516
MB 240-565654/6-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-565654/7-A	Lab Control Sample	Total/NA	Solid	3510C	

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

GC Semi VOA

Analysis Batch: 565762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	TCLP	Solid	8081B	565654
MB 240-565654/6-A	Method Blank	Total/NA	Solid	8081B	565654
LCS 240-565654/7-A	Lab Control Sample	Total/NA	Solid	8081B	565654

Specialty Organics

Prep Batch: 354736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	HRMS-Soxtherm	
MB 410-354736/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-354736/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 355523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-354736/1-A	Method Blank	Total/NA	Solid	8290A	354736
LCS 410-354736/2-A	Lab Control Sample	Total/NA	Solid	8290A	354736

Analysis Batch: 355676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	8290A	354736

Metals

Leach Batch: 565526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	1311	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	1311	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	1311	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	1311	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	1311	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	1311	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	1311	
LB 240-565526/1-B	Method Blank	TCLP	Solid	1311	
LB 240-565526/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 565630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	3010A	565526
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	3010A	565526
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	3010A	565526
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	3010A	565526
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	3010A	565526
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	3010A	565526
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	3010A	565526
LB 240-565526/1-B	Method Blank	TCLP	Solid	3010A	565526
MB 240-565630/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-565630/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 565632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	7470A	565526
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	7470A	565526

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Metals (Continued)

Prep Batch: 565632 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	7470A	565526
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	7470A	565526
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	7470A	565526
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	7470A	565526
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	7470A	565526
LB 240-565526/1-C	Method Blank	TCLP	Solid	7470A	565526
MB 240-565632/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-565632/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 565882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	6010D	565630
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	6010D	565630
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	6010D	565630
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	6010D	565630
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	6010D	565630
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	6010D	565630
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	6010D	565630
LB 240-565526/1-B	Method Blank	TCLP	Solid	6010D	565630
MB 240-565630/2-A	Method Blank	Total/NA	Solid	6010D	565630
LCS 240-565630/3-A	Lab Control Sample	Total/NA	Solid	6010D	565630

Analysis Batch: 566117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	TCLP	Solid	7470A	565632
240-181894-10	WC-S. TRK-WEST-09 (10-12)	TCLP	Solid	7470A	565632
240-181894-11	WC-S. TRK-WEST-10 (10-12)	TCLP	Solid	7470A	565632
240-181894-12	WC-S. TRK-WEST-11 (12-14)	TCLP	Solid	7470A	565632
240-181894-13	WC-S. TRK-WEST-12 (12-14)	TCLP	Solid	7470A	565632
240-181894-14	WC-S. TRK-WEST-13 (14-16)	TCLP	Solid	7470A	565632
240-181894-15	WC-S. TRK-WEST-14 (14-16)	TCLP	Solid	7470A	565632
LB 240-565526/1-C	Method Blank	TCLP	Solid	7470A	565632
MB 240-565632/2-A	Method Blank	Total/NA	Solid	7470A	565632
LCS 240-565632/3-A	Lab Control Sample	Total/NA	Solid	7470A	565632

General Chemistry

Composite Batch: 565477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Composite	

Analysis Batch: 565507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-9	WC-S. TRK-WEST-08 (8-10)	Total/NA	Solid	Moisture	
240-181894-10	WC-S. TRK-WEST-09 (10-12)	Total/NA	Solid	Moisture	
240-181894-11	WC-S. TRK-WEST-10 (10-12)	Total/NA	Solid	Moisture	
240-181894-12	WC-S. TRK-WEST-11 (12-14)	Total/NA	Solid	Moisture	
240-181894-13	WC-S. TRK-WEST-12 (12-14)	Total/NA	Solid	Moisture	
240-181894-14	WC-S. TRK-WEST-13 (14-16)	Total/NA	Solid	Moisture	
240-181894-15	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	Moisture	
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	Total/NA	Solid	Moisture	565477

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

General Chemistry (Continued)

Analysis Batch: 565507 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181894-15 DU	WC-S. TRK-WEST-14 (14-16)	Total/NA	Solid	Moisture	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:08
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:54
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-08 (8-10)

Lab Sample ID: 240-181894-9

Date Collected: 03/14/23 14:15

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 08:55
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		5.26315 789	565878	CS	EET CAN	03/17/23 20:32
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 18:24

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:12
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 14:56
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 07:44
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		5	565699	CS	EET CAN	03/16/23 23:47
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		10	565878	CS	EET CAN	03/17/23 20:57

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-09 (10-12)

Lab Sample ID: 240-181894-10

Date Collected: 03/14/23 14:35

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 81.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 18:49

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:17
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:03
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-10 (10-12)

Lab Sample ID: 240-181894-11

Date Collected: 03/14/23 15:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565699	CS	EET CAN	03/17/23 00:12
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		100	565783	JMG	EET CAN	03/17/23 16:46

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:22
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:05
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 09:19

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-11 (12-14)

Lab Sample ID: 240-181894-12

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		8.3333	565878	CS	EET CAN	03/17/23 20:07
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		5	565783	JMG	EET CAN	03/17/23 15:33

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:35
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:07
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-12 (12-14)

Lab Sample ID: 240-181894-13

Date Collected: 03/14/23 15:51

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 11:43
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		16.6666	565878	CS	EET CAN	03/17/23 19:42
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		20	565783	JMG	EET CAN	03/17/23 18:00

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:39
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:09
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-13 (14-16)

Lab Sample ID: 240-181894-14

Date Collected: 03/14/23 16:10

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 12:31
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		16.6666	565878	CS	EET CAN	03/17/23 18:16
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		2.5	565783	JMG	EET CAN	03/17/23 19:13

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3010A			565630	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	6010D		1	565882	RKT	EET CAN	03/17/23 20:44
TCLP	Leach	1311			565526	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	7470A			565632	MRL	EET CAN	03/16/23 14:00
TCLP	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:11
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 13:31

Client Sample ID: WC-S. TRK-WEST-14 (14-16)

Lab Sample ID: 240-181894-15

Date Collected: 03/14/23 16:30

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 77.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		1	565727	TJL2	EET CAN	03/17/23 13:19
Total/NA	Prep	5035			565503	LAM	EET CAN	03/15/23 13:01
Total/NA	Analysis	8260D		100	565699	CS	EET CAN	03/17/23 01:53
Total/NA	Prep	3540C			565464	BMB	EET CAN	03/15/23 09:31
Total/NA	Analysis	8270E		100	565783	JMG	EET CAN	03/17/23 17:11

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565528	DRJ	EET CAN	03/15/23 15:00 - 03/16/23 08:20 ¹
TCLP	Analysis	8260D		1	565827	AJS	EET CAN	03/17/23 15:56
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565653	SDE	EET CAN	03/16/23 11:22
TCLP	Analysis	8270E		1	565910	MRU	EET CAN	03/18/23 16:01

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181894-1

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565478	DRJ	EET CAN	03/15/23 10:16
TCLP	Leach	1311			565516	DRJ	EET CAN	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	3510C			565654	SDE	EET CAN	03/16/23 11:26
TCLP	Analysis	8081B		1	565762	BPM	EET CAN	03/17/23 11:58
TCLP	Leach	1311			354756	N3PD	ELLE	03/15/23 16:20 - 03/16/23 08:25 ¹
TCLP	Prep	8151A			355463	K2IL	ELLE	03/20/23 19:00
TCLP	Analysis	8151A		1	355545	UAMZ	ELLE	03/21/23 06:50
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Analysis	Moisture		1	565507	MED	EET CAN	03/15/23 14:34

Client Sample ID: WC-S. TRK-WEST-COMP (08-14)

Lab Sample ID: 240-181894-16

Date Collected: 03/14/23 00:00

Matrix: Solid

Date Received: 03/14/23 19:20

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			565477	DRJ	EET CAN	03/15/23 10:16
Total/NA	Prep	3546			565605	AJ	EET CAN	03/16/23 08:44
Total/NA	Analysis	8082A		1	565569	LSH	EET CAN	03/16/23 18:56
Total/NA	Prep	HRMS-Soxtherm			354736	UJSZ	ELLE	03/17/23 11:07
Total/NA	Analysis	8290A		1	355676	DZ6A	ELLE	03/22/23 09:08

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

Address: ELYD KIN

Chain of Custody Record

645685



Environment Testing America

TAL-8210

Regulatory Program: DW NPDES RCRA Other: _____

Client Contact: ASCADIS Project Manager: Michelle Clayton Site Contact: Mike DeMunn Date: 02/14/23 of 2 COCs

Company Name: ASCADIS Lab Contact: Mike DeMunn Carrier: DAVID LOEWEN Sampler: DAVID LOEWEN

Address: 55 MIDWINTER (VTL) ST. #200 For Lab Use Only: _____

City/State/Zip: INDIANAPOLIS, IN 46203 Walk-in Client: _____

Phone: _____ Lab Sampling: _____

Fax: _____ Job / SDG No.: _____

Project Name: NO. FOLK SOUTHBRN Sample Specific Notes: _____

Site: E. PALETTINE OH

P O # _____

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time		Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
						CALENDAR DAYS	WORKING DAYS		
WC-S-TYK-WEST-D1(2-4)	3/14/23	1044	G	S	9				
WC-S-TYK-WEST-D2(6-8)	3/14/23	1115	G	S	9				
WC-S-TYK-WEST-D3(2-4)	3/14/23	1145	G	S	9				
WC-S-TYK-WEST-D4(4-6)	3/14/23	1200	G	S	9				
WC-S-TYK-WEST-D5(4-8)	3/14/23	1215	G	S	9				
WC-S-TYK-WEST-D6(6-8)	3/14/23	1230	G	S	9				
WC-S-TYK-WEST-D7(8-10)	3/14/23	1310	G	S	9				
WC-S-TYK-WEST-COMP(01-07)	3/14/23	---	LAB COMP	S	X				
WC-S-TYK-WEST-08(8-10)	3/14/23	1415	G	S	9				
WC-S-TYK-WEST-09(10-12)	3/14/23	1435	G	S	9				
WC-S-TYK-WEST-10(10-12)	3/14/23	1530	G	S	9				
WC-S-TYK-WEST-11(12-14)	3/14/23	1551	G	S	9				



240-181894 Chain of Custody

LAB TO GENERATE COMMAND FILE

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: _____

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. NO, BUTY ACRYLATE

Special Instructions/QC Requirements & Comments: _____

LAB TO GENERATE COMPOSITE SAMPLES EACH CONTAINING 7 GRAB SAMPLES

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Custody Seal No.: _____ Cooler Temp. (°C): Obs'd _____

Relinquished by: David Loewen Company: ASCADIS Date/Time: 3/14/23 17:40

Relinquished by: Michelle Clayton Company: EETNC Date/Time: 3-14-23 1920

Relinquished by: _____ Company: _____ Date/Time: _____

Eurofins - Canton Sample Receipt Form/Narrative Login #: 181894
Barberton Facility

Client Acadus Site Name NSRR-ER Cooler unpacked by: Jul
Cooler Received on 3-14-23 Opened on 3-14-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EL Foam Box _____ Client Cooler _____ Box _____ Other _____
Packing material used: Bubble Wrap _____ Foam Plastic Bag None _____ Other _____
COOLANT: Wet Ice Blue Ice _____ Dry Ice _____ Water _____ None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181894-1

Login Number: 181894

List Number: 2

Creator: McBeth, Jessica

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Creation: 03/16/23 09:53 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-181894-1

Login Number: 181894

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 3

List Creation: 03/17/23 02:47 PM

Creator: Foreman, Leah M

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181894-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	88	91	90	91	93	90	94	97
LCS 410-354736/2-A	Lab Control Sample	85	87	79	78	85	84	83	84
MB 410-354736/1-A	Method Blank	98	99	86	86	93	94	97	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	91	91	91	92	91	89	91	88
LCS 410-354736/2-A	Lab Control Sample	81	78	88	82	82	85	81	84
MB 410-354736/1-A	Method Blank	89	85	100	93	94	93	92	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)							
240-181894-16	WC-S. TRK-WEST-COMP (08-14)	92							
LCS 410-354736/2-A	Lab Control Sample	85							
MB 410-354736/1-A	Method Blank	96							

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/31/2023 7:22:04 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182146-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/31/2023 7:22:04 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	12
Surrogate Summary	32
QC Sample Results	36
QC Association Summary	57
Lab Chronicle	62
Certification Summary	65
Chain of Custody	67
Receipt Checklists	71
Isotope Dilution Summary	72

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Job ID: 240-182146-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182146-1

Comments

No additional comments.

Receipt

The samples were received on 3/17/2023 7:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.1° C.

All soil samples collected in TerraCore kits were frozen within 48hours of collection.

GC/MS VOA

Method 5035: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-VB1402-PLASTIC PELLETS (240-182146-1), WC-VB1344-PLASTIC PELLETS (240-182146-2), WC-VB1108-PLASTIC PELLETS (240-182146-3) and WC-SB1597-SOIL & DEBRIS (240-182146-6).

Method 8260D: The MS/MSD for preparation batch 240-566125 and analytical batch 240-566130 was prepped and analyzed but is not reported because the parent sample was reported in another batch.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566130 recovered above the upper control limit for 1,1,1-Trichloroethane, Bromomethane, Carbon tetrachloride and Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: Internal standard (ISTD) response for the following samples was outside control limits: WC-VB1344-PLASTIC PELLETS (240-182146-2) and WC-VB1108-PLASTIC PELLETS (240-182146-3). The samples were re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260D: Surrogate recovery for the following samples was outside control limits: WC-VB1344-PLASTIC PELLETS (240-182146-2) and WC-VB1108-PLASTIC PELLETS (240-182146-3). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: WC-SB1597-SOIL & DEBRIS (240-182146-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566249 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Method 8260D: Internal standard (ISTD) response for the following samples was outside control limits: WC-VB1402-PLASTIC PELLETS (240-182146-1). The samples were re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260D: Surrogate recovery for the following samples was outside control limits: WC-VB1402-PLASTIC PELLETS (240-182146-1). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-566308 recovered above the upper control limit for Di-n-octyl phthalate. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: WC-VB1402-PLASTIC PELLETS (240-182146-1), WC-VB1344-PLASTIC PELLETS (240-182146-2), WC-VB1108-PLASTIC PELLETS (240-182146-3) and WC-SB1597-SOIL & DEBRIS (240-182146-6).

Method 8270E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 240-566028 and analytical batch 240-566308 were outside control limits for one or more analytes. Sample matrix interference and/or non-homogeneity are suspected

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Job ID: 240-182146-1 (Continued)

Laboratory: Eurofins Canton (Continued)

because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
Moisture	Percent Moisture	EPA	ELLE
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182146-1	WC-VB1402-PLASTIC PELLETS	Solid	03/17/23 14:45	03/17/23 19:00
240-182146-2	WC-VB1344-PLASTIC PELLETS	Solid	03/17/23 14:30	03/17/23 19:00
240-182146-3	WC-VB1108-PLASTIC PELLETS	Solid	03/17/23 15:30	03/17/23 19:00
240-182146-4	WC-COMP-PLASTIC PELLETS	Solid	03/17/23 00:00	03/17/23 19:00
240-182146-5	WC-COMP1-N. DITCH	Solid	03/17/23 14:00	03/17/23 19:00
240-182146-6	WC-SB1597-SOIL & DEBRIS	Solid	03/17/23 15:00	03/17/23 19:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.17		0.065	0.055	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.0033	J *3	0.013	0.0020	mg/Kg	1	✳	8260D	Total/NA
Dimethyl phthalate	0.13	J	0.42	0.083	mg/Kg	1	✳	8270E	Total/NA
Di-n-butyl phthalate	0.44		0.42	0.30	mg/Kg	1	✳	8270E	Total/NA
Phenol	0.76		0.30	0.047	mg/Kg	1	✳	8270E	Total/NA
Arsenic	0.0059	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.11	J	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.0070	J	0.015	0.0023	mg/Kg	1	✳	8260D	Total/NA
Arsenic	0.0059	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.0027	J	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.12		0.070	0.059	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.0061	J	0.014	0.0020	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.0062	J	0.014	0.0022	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.0077	J	0.028	0.0044	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.022	J	0.090	0.012	mg/Kg	1	✳	8270E	Total/NA
Naphthalene	0.048	J	0.090	0.014	mg/Kg	1	✳	8270E	Total/NA
Barium	0.0031	J	0.50	0.0013	mg/L	1		6010D	TCLP

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

No Detections.

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-182146-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	330	B	4.9	0.13	ng/Kg	1		8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	26	B	4.9	0.089	ng/Kg	1		8290A	Total/NA
1,2,3,4,7,8-HxCDD	12		4.9	0.045	ng/Kg	1		8290A	Total/NA
1,2,3,4,7,8-HxCDF	2.5	J B	4.9	0.064	ng/Kg	1		8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	1.6	J B	4.9	0.11	ng/Kg	1		8290A	Total/NA
1,2,3,6,7,8-HxCDD	18	B	4.9	0.044	ng/Kg	1		8290A	Total/NA
1,2,3,6,7,8-HxCDF	2.3	J	4.9	0.063	ng/Kg	1		8290A	Total/NA
1,2,3,7,8-PeCDD	14	B	4.9	0.083	ng/Kg	1		8290A	Total/NA
1,2,3,7,8-PeCDF	1.2	J	4.9	0.074	ng/Kg	1		8290A	Total/NA
1,2,3,7,8,9-HxCDD	64	B	4.9	0.043	ng/Kg	1		8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.81	J B	4.9	0.078	ng/Kg	1		8290A	Total/NA
2,3,4,6,7,8-HxCDF	3.9	J	4.9	0.061	ng/Kg	1		8290A	Total/NA
2,3,4,7,8-PeCDF	6.5		4.9	0.055	ng/Kg	1		8290A	Total/NA
2,3,7,8-TCDD	2.8		0.97	0.012	ng/Kg	1		8290A	Total/NA
2,3,7,8-TCDF	1.1		0.97	0.043	ng/Kg	1		8290A	Total/NA
OCDD	2400	B	9.7	0.13	ng/Kg	1		8290A	Total/NA
OCDF	44		9.7	0.023	ng/Kg	1		8290A	Total/NA
Total HxCDD	370	B	4.9	0.044	ng/Kg	1		8290A	Total/NA
Total HxCDF	49	B	4.9	0.066	ng/Kg	1		8290A	Total/NA
Total HpCDD	720	B	4.9	0.13	ng/Kg	1		8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP1-N. DITCH (Continued)

Lab Sample ID: 240-182146-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDF	57	B	4.9	0.099	ng/Kg	1		8290A	Total/NA
Total PeCDD	130	B	4.9	0.083	ng/Kg	1		8290A	Total/NA
Total PeCDF	71	B	4.9	0.065	ng/Kg	1		8290A	Total/NA
Total TCDD	32	I B	0.97	0.012	ng/Kg	1		8290A	Total/NA
Total TCDF	33	I	0.97	0.043	ng/Kg	1		8290A	Total/NA

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1'-Biphenyl	0.031	J	0.066	0.022	mg/Kg	1	☼	8270E	Total/NA
2-Methylnaphthalene	0.30		0.020	0.0026	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.023		0.020	0.0038	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.027		0.020	0.0053	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.047		0.020	0.0032	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.16		0.020	0.0045	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.16		0.020	0.012	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.29		0.020	0.0086	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.093		0.020	0.0094	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.058		0.020	0.0091	mg/Kg	1	☼	8270E	Total/NA
Carbazole	0.029	J	0.066	0.025	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.22	F1	0.020	0.0020	mg/Kg	1	☼	8270E	Total/NA
Dibenz(a,h)anthracene	0.031		0.020	0.0091	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.11		0.066	0.017	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.32	F2 F1	0.020	0.0059	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.022		0.020	0.0036	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.091		0.020	0.0097	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.21		0.020	0.0032	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.30	F2 F1	0.020	0.0029	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.29	F2 F1	0.020	0.0028	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.0081	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.68		0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.010	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0042	J	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0070	J	0.050	0.0028	mg/L	1		6010D	TCLP
Mercury	0.00016	J	0.0020	0.00013	mg/L	1		7470A	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.013	0.0046	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,1,1,2-Tetrachloroethane	ND	*3	0.013	0.0037	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.013	0.0034	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,1,2-Trichloroethane	ND	*3	0.013	0.0030	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,1-Dichloroethane	ND		0.013	0.0018	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,1-Dichloroethene	ND		0.013	0.0048	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,2,4-Trichlorobenzene	ND	*3	0.013	0.0065	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.026	0.0094	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Ethylene Dibromide	ND	*3	0.013	0.0020	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,2-Dichlorobenzene	ND	*3	0.013	0.0029	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,2-Dichloroethane	ND		0.013	0.0020	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,2-Dichloropropane	ND		0.013	0.0022	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,3-Dichlorobenzene	ND	*3	0.013	0.0021	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
1,4-Dichlorobenzene	ND	*3	0.013	0.0023	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
2-Butanone (MEK)	ND		0.052	0.0093	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
2-Hexanone	ND	*3	0.052	0.011	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
4-Methyl-2-pentanone (MIBK)	ND	*3	0.052	0.0097	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Acetone	0.17		0.065	0.055	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Benzene	ND		0.013	0.0018	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Dichlorobromomethane	ND		0.013	0.0039	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Bromoform	ND	*3	0.013	0.0063	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Bromomethane	ND		0.013	0.011	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Carbon disulfide	ND		0.013	0.0030	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Carbon tetrachloride	ND		0.013	0.0085	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Chlorobenzene	ND	*3	0.013	0.0024	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Chloroethane	ND		0.013	0.0072	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Chloroform	ND		0.013	0.0021	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Chloromethane	ND		0.013	0.0060	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
cis-1,2-Dichloroethene	ND		0.013	0.0039	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
cis-1,3-Dichloropropene	ND		0.013	0.0075	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Cyclohexane	ND		0.026	0.0036	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Chlorodibromomethane	ND	*3	0.013	0.0073	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Dichlorodifluoromethane	ND		0.013	0.0025	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Ethylbenzene	ND	*3	0.013	0.0027	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Isopropylbenzene	ND	*3	0.013	0.0050	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Methyl acetate	ND		0.065	0.0089	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Methyl tert-butyl ether	ND		0.013	0.0052	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Methylcyclohexane	ND		0.026	0.0032	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Methylene Chloride	ND		0.065	0.031	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Styrene	ND	*3	0.013	0.0030	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Tetrachloroethene	ND	*3	0.013	0.0019	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Toluene	0.0033	J *3	0.013	0.0020	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
trans-1,2-Dichloroethene	ND		0.013	0.0037	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
trans-1,3-Dichloropropene	ND	*3	0.013	0.0097	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Trichloroethene	ND		0.013	0.0017	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Trichlorofluoromethane	ND		0.013	0.0070	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Vinyl chloride	ND		0.013	0.0046	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Xylenes, Total	ND	*3	0.026	0.0042	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1
Butyl acrylate	ND	*3	0.13	0.051	mg/Kg	✳	03/17/23 20:00	03/21/23 19:51	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.026	0.0081	mg/Kg	☼	03/17/23 20:00	03/21/23 19:51	1
2-Ethylhexyl acrylate	ND	*3	0.13	0.062	mg/Kg	☼	03/17/23 20:00	03/21/23 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	128	*3 S1+	56 - 125				03/17/23 20:00	03/21/23 19:51	1
<i>Dibromofluoromethane (Surr)</i>	98		41 - 138				03/17/23 20:00	03/21/23 19:51	1
<i>4-Bromofluorobenzene (Surr)</i>	157	*3 S1+	41 - 143				03/17/23 20:00	03/21/23 19:51	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	107		58 - 125				03/17/23 20:00	03/21/23 19:51	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.30	0.10	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
bis (2-chloroisopropyl) ether	ND		0.59	0.059	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4,5-Trichlorophenol	ND		0.89	0.41	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4,6-Trichlorophenol	ND		0.89	0.38	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4-Dichlorophenol	ND		0.89	0.26	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4-Dimethylphenol	ND		0.89	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4-Dinitrophenol	ND		2.0	0.84	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,4-Dinitrotoluene	ND		1.2	0.37	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2,6-Dinitrotoluene	ND		1.2	0.33	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Chloronaphthalene	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Chlorophenol	ND		0.30	0.059	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Methylnaphthalene	ND		0.089	0.012	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Methylphenol	ND		1.2	0.18	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Nitroaniline	ND		1.2	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
2-Nitrophenol	ND		0.30	0.077	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
3,3'-Dichlorobenzidine	ND		0.59	0.26	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
3-Nitroaniline	ND		1.2	0.29	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4,6-Dinitro-2-methylphenol	ND		2.0	0.47	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Bromophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Chloro-3-methylphenol	ND		0.89	0.27	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Chloroaniline	ND		0.89	0.18	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Chlorophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Nitroaniline	ND		1.2	0.36	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
4-Nitrophenol	ND		2.0	0.56	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Acenaphthene	ND		0.089	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Acenaphthylene	ND		0.089	0.024	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Acetophenone	ND		0.59	0.065	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Anthracene	ND		0.089	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Atrazine	ND		1.2	0.21	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzaldehyde	ND		0.59	0.14	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzo[a]anthracene	ND		0.089	0.020	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzo[a]pyrene	ND		0.089	0.055	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzo[b]fluoranthene	ND		0.089	0.039	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzo[g,h,i]perylene	ND		0.089	0.042	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Benzo[k]fluoranthene	ND		0.089	0.041	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Bis(2-chloroethoxy)methane	ND		0.59	0.071	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Bis(2-chloroethyl)ether	ND		0.59	0.071	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Bis(2-ethylhexyl) phthalate	ND		0.42	0.30	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1
Butyl benzyl phthalate	ND		0.42	0.13	mg/Kg	☼	03/20/23 09:24	03/22/23 12:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.0	0.45	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Carbazole	ND		0.30	0.11	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Chrysene	ND		0.089	0.0088	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Dibenz(a,h)anthracene	ND		0.089	0.041	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Dibenzofuran	ND		0.30	0.077	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Diethyl phthalate	ND		0.42	0.18	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Dimethyl phthalate	0.13	J	0.42	0.083	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Di-n-butyl phthalate	0.44		0.42	0.30	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Di-n-octyl phthalate	ND		0.42	0.17	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Fluoranthene	ND		0.089	0.026	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Fluorene	ND		0.089	0.016	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Hexachlorobenzene	ND		0.089	0.017	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Hexachlorobutadiene	ND		0.30	0.071	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Hexachlorocyclopentadiene	ND		2.0	0.37	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Hexachloroethane	ND		0.30	0.053	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Indeno[1,2,3-cd]pyrene	ND		0.089	0.044	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Isophorone	ND		0.30	0.071	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
N-Nitrosodi-n-propylamine	ND		0.30	0.065	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
N-Nitrosodiphenylamine	ND		0.30	0.071	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Naphthalene	ND		0.089	0.014	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Nitrobenzene	ND		0.59	0.077	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Pentachlorophenol	ND		0.89	0.34	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Phenanthrene	ND		0.089	0.013	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Phenol	0.76		0.30	0.047	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
Pyrene	ND		0.089	0.013	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
3 & 4 Methylphenol	ND		2.4	0.17	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1
2-Butoxyethanol	ND		0.42	0.39	mg/Kg	✳	03/20/23 09:24	03/22/23 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	97		46 - 137	03/20/23 09:24	03/22/23 12:56	1
Phenol-d5 (Surr)	78		26 - 120	03/20/23 09:24	03/22/23 12:56	1
Nitrobenzene-d5 (Surr)	58		25 - 120	03/20/23 09:24	03/22/23 12:56	1
2-Fluorophenol (Surr)	69		20 - 120	03/20/23 09:24	03/22/23 12:56	1
2-Fluorobiphenyl (Surr)	73		34 - 120	03/20/23 09:24	03/22/23 12:56	1
2,4,6-Tribromophenol (Surr)	72		10 - 120	03/20/23 09:24	03/22/23 12:56	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0059	J B	0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 17:56	1
Barium	0.11	J	0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 17:56	1
Cadmium	ND		0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 17:56	1
Chromium	ND		0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 17:56	1
Lead	ND		0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 17:56	1
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 17:56	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 17:56	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/20/23 14:00	03/21/23 14:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.9		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	0.1		0.1	0.1	%			03/20/23 11:50	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 100.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.015	0.0053	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,1,2,2-Tetrachloroethane	ND	*3	0.015	0.0043	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.015	0.0039	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,1,2-Trichloroethane	ND		0.015	0.0034	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,1-Dichloroethane	ND		0.015	0.0021	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,1-Dichloroethene	ND		0.015	0.0055	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,2,4-Trichlorobenzene	ND	*3	0.015	0.0075	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.030	0.011	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Ethylene Dibromide	ND		0.015	0.0023	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,2-Dichlorobenzene	ND	*3	0.015	0.0034	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,2-Dichloroethane	ND		0.015	0.0023	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,2-Dichloropropane	ND		0.015	0.0026	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,3-Dichlorobenzene	ND	*3	0.015	0.0025	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
1,4-Dichlorobenzene	ND	*3	0.015	0.0027	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
2-Butanone (MEK)	ND		0.060	0.011	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
2-Hexanone	ND		0.060	0.012	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
4-Methyl-2-pentanone (MIBK)	ND		0.060	0.011	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Acetone	ND		0.075	0.063	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Benzene	ND		0.015	0.0021	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Dichlorobromomethane	ND		0.015	0.0045	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Bromoform	ND		0.015	0.0072	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Bromomethane	ND		0.015	0.013	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Carbon disulfide	ND		0.015	0.0035	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Carbon tetrachloride	ND		0.015	0.0098	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Chlorobenzene	ND		0.015	0.0028	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Chloroethane	ND		0.015	0.0083	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Chloroform	ND		0.015	0.0024	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Chloromethane	ND		0.015	0.0069	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
cis-1,2-Dichloroethene	ND		0.015	0.0045	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
cis-1,3-Dichloropropene	ND		0.015	0.0087	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Cyclohexane	ND		0.030	0.0041	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Chlorodibromomethane	ND		0.015	0.0084	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Dichlorodifluoromethane	ND		0.015	0.0028	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Ethylbenzene	ND		0.015	0.0032	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Isopropylbenzene	ND		0.015	0.0058	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Methyl acetate	ND		0.075	0.010	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Methyl tert-butyl ether	ND		0.015	0.0060	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Methylcyclohexane	ND		0.030	0.0037	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Methylene Chloride	ND		0.075	0.036	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Styrene	ND		0.015	0.0035	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Tetrachloroethene	ND		0.015	0.0022	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Toluene	0.0070	J	0.015	0.0023	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
trans-1,2-Dichloroethene	ND		0.015	0.0043	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
trans-1,3-Dichloropropene	ND		0.015	0.011	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Trichloroethene	ND		0.015	0.0019	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Trichlorofluoromethane	ND		0.015	0.0081	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Vinyl chloride	ND		0.015	0.0053	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Xylenes, Total	ND		0.030	0.0048	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1
Butyl acrylate	ND		0.15	0.058	mg/Kg	✳	03/17/23 20:00	03/20/23 23:34	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 100.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.030	0.0093	mg/Kg	☼	03/17/23 20:00	03/20/23 23:34	1
2-Ethylhexyl acrylate	ND	*3	0.15	0.071	mg/Kg	☼	03/17/23 20:00	03/20/23 23:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	129	S1+	56 - 125				03/17/23 20:00	03/20/23 23:34	1
<i>Dibromofluoromethane (Surr)</i>	112		41 - 138				03/17/23 20:00	03/20/23 23:34	1
<i>4-Bromofluorobenzene (Surr)</i>	162	S1+ *3	41 - 143				03/17/23 20:00	03/20/23 23:34	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	121		58 - 125				03/17/23 20:00	03/20/23 23:34	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.30	0.10	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
bis (2-chloroisopropyl) ether	ND		0.59	0.059	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4,5-Trichlorophenol	ND		0.89	0.41	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4,6-Trichlorophenol	ND		0.89	0.38	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4-Dichlorophenol	ND		0.89	0.26	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4-Dimethylphenol	ND		0.89	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4-Dinitrophenol	ND		1.9	0.84	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,4-Dinitrotoluene	ND		1.2	0.37	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2,6-Dinitrotoluene	ND		1.2	0.33	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Chloronaphthalene	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Chlorophenol	ND		0.30	0.059	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Methylnaphthalene	ND		0.089	0.012	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Methylphenol	ND		1.2	0.18	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Nitroaniline	ND		1.2	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
2-Nitrophenol	ND		0.30	0.077	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
3,3'-Dichlorobenzidine	ND		0.59	0.25	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
3-Nitroaniline	ND		1.2	0.29	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4,6-Dinitro-2-methylphenol	ND		1.9	0.47	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Bromophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Chloro-3-methylphenol	ND		0.89	0.27	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Chloroaniline	ND		0.89	0.18	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Chlorophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Nitroaniline	ND		1.2	0.35	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
4-Nitrophenol	ND		1.9	0.56	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Acenaphthene	ND		0.089	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Acenaphthylene	ND		0.089	0.024	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Acetophenone	ND		0.59	0.065	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Anthracene	ND		0.089	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Atrazine	ND		1.2	0.21	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzaldehyde	ND		0.59	0.14	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzo[a]anthracene	ND		0.089	0.020	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzo[a]pyrene	ND		0.089	0.055	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzo[b]fluoranthene	ND		0.089	0.038	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzo[g,h,i]perylene	ND		0.089	0.042	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Benzo[k]fluoranthene	ND		0.089	0.041	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Bis(2-chloroethoxy)methane	ND		0.59	0.071	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Bis(2-chloroethyl)ether	ND		0.59	0.071	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Bis(2-ethylhexyl) phthalate	ND		0.41	0.30	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1
Butyl benzyl phthalate	ND		0.41	0.13	mg/Kg	☼	03/20/23 09:24	03/22/23 13:20	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 100.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.9	0.44	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Carbazole	ND		0.30	0.11	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Chrysene	ND		0.089	0.0088	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Dibenz(a,h)anthracene	ND		0.089	0.041	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Dibenzofuran	ND		0.30	0.077	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Diethyl phthalate	ND		0.41	0.18	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Dimethyl phthalate	ND		0.41	0.083	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Di-n-butyl phthalate	ND		0.41	0.30	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Di-n-octyl phthalate	ND		0.41	0.17	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Fluoranthene	ND		0.089	0.026	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Fluorene	ND		0.089	0.016	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Hexachlorobenzene	ND		0.089	0.017	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Hexachlorobutadiene	ND		0.30	0.071	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Hexachlorocyclopentadiene	ND		1.9	0.37	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Hexachloroethane	ND		0.30	0.053	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Indeno[1,2,3-cd]pyrene	ND		0.089	0.043	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Isophorone	ND		0.30	0.071	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
N-Nitrosodi-n-propylamine	ND		0.30	0.065	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
N-Nitrosodiphenylamine	ND		0.30	0.071	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Naphthalene	ND		0.089	0.014	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Nitrobenzene	ND		0.59	0.077	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Pentachlorophenol	ND		0.89	0.34	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Phenanthrene	ND		0.089	0.013	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Phenol	ND		0.30	0.047	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
Pyrene	ND		0.089	0.013	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
3 & 4 Methylphenol	ND		2.4	0.17	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1
2-Butoxyethanol	ND		0.41	0.39	mg/Kg	☆	03/20/23 09:24	03/22/23 13:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	82		46 - 137	03/20/23 09:24	03/22/23 13:20	1
Phenol-d5 (Surr)	79		26 - 120	03/20/23 09:24	03/22/23 13:20	1
Nitrobenzene-d5 (Surr)	55		25 - 120	03/20/23 09:24	03/22/23 13:20	1
2-Fluorophenol (Surr)	66		20 - 120	03/20/23 09:24	03/22/23 13:20	1
2-Fluorobiphenyl (Surr)	70		34 - 120	03/20/23 09:24	03/22/23 13:20	1
2,4,6-Tribromophenol (Surr)	71		10 - 120	03/20/23 09:24	03/22/23 13:20	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0059	J B	0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 18:18	1
Barium	0.0027	J	0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 18:18	1
Cadmium	ND		0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 18:18	1
Chromium	ND		0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 18:18	1
Lead	ND		0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 18:18	1
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 18:18	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 18:18	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/20/23 14:00	03/21/23 14:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 100.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	100		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	0.03		0.1	0.1	%			03/20/23 11:50	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.014	0.0050	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,1,2,2-Tetrachloroethane	ND	*3	0.014	0.0040	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.014	0.0036	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,1,2-Trichloroethane	ND		0.014	0.0032	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,1-Dichloroethane	ND		0.014	0.0019	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,1-Dichloroethene	ND		0.014	0.0051	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,2,4-Trichlorobenzene	ND	*3	0.014	0.0070	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.028	0.010	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Ethylene Dibromide	ND		0.014	0.0022	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,2-Dichlorobenzene	ND	*3	0.014	0.0031	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,2-Dichloroethane	ND		0.014	0.0022	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,2-Dichloropropane	ND		0.014	0.0024	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,3-Dichlorobenzene	ND	*3	0.014	0.0023	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
1,4-Dichlorobenzene	ND	*3	0.014	0.0025	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
2-Butanone (MEK)	ND		0.056	0.010	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
2-Hexanone	ND		0.056	0.011	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
4-Methyl-2-pentanone (MIBK)	ND		0.056	0.010	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Acetone	0.12		0.070	0.059	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Benzene	0.0061	J	0.014	0.0020	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Dichlorobromomethane	ND		0.014	0.0042	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Bromoform	ND		0.014	0.0067	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Bromomethane	ND		0.014	0.012	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Carbon disulfide	ND		0.014	0.0033	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Carbon tetrachloride	ND		0.014	0.0091	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Chlorobenzene	ND		0.014	0.0026	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Chloroethane	ND		0.014	0.0077	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Chloroform	ND		0.014	0.0022	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Chloromethane	ND		0.014	0.0064	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
cis-1,2-Dichloroethene	ND		0.014	0.0041	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
cis-1,3-Dichloropropene	ND		0.014	0.0081	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Cyclohexane	ND		0.028	0.0039	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Chlorodibromomethane	ND		0.014	0.0078	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Dichlorodifluoromethane	ND		0.014	0.0026	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Ethylbenzene	ND		0.014	0.0029	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Isopropylbenzene	ND		0.014	0.0054	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Methyl acetate	ND		0.070	0.0095	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Methyl tert-butyl ether	ND		0.014	0.0055	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Methylcyclohexane	ND		0.028	0.0034	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Methylene Chloride	ND		0.070	0.034	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Styrene	ND		0.014	0.0032	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Tetrachloroethene	ND		0.014	0.0020	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Toluene	0.0062	J	0.014	0.0022	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
trans-1,2-Dichloroethene	ND		0.014	0.0040	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
trans-1,3-Dichloropropene	ND		0.014	0.010	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Trichloroethene	ND		0.014	0.0018	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Trichlorofluoromethane	ND		0.014	0.0075	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Vinyl chloride	ND		0.014	0.0050	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Xylenes, Total	0.0077	J	0.028	0.0044	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1
Butyl acrylate	ND		0.14	0.054	mg/Kg	✳	03/17/23 20:00	03/20/23 23:59	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.028	0.0086	mg/Kg	☼	03/17/23 20:00	03/20/23 23:59	1
2-Ethylhexyl acrylate	ND	*3	0.14	0.066	mg/Kg	☼	03/17/23 20:00	03/20/23 23:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	131	S1+	56 - 125				03/17/23 20:00	03/20/23 23:59	1
<i>Dibromofluoromethane (Surr)</i>	113		41 - 138				03/17/23 20:00	03/20/23 23:59	1
<i>4-Bromofluorobenzene (Surr)</i>	170	S1+ *3	41 - 143				03/17/23 20:00	03/20/23 23:59	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	124		58 - 125				03/17/23 20:00	03/20/23 23:59	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.30	0.10	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
bis (2-chloroisopropyl) ether	ND		0.60	0.060	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4,5-Trichlorophenol	ND		0.90	0.41	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4,6-Trichlorophenol	ND		0.90	0.38	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4-Dichlorophenol	ND		0.90	0.26	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4-Dimethylphenol	ND		0.90	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4-Dinitrophenol	ND		2.0	0.85	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,4-Dinitrotoluene	ND		1.2	0.37	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2,6-Dinitrotoluene	ND		1.2	0.34	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Chloronaphthalene	ND		0.30	0.084	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Chlorophenol	ND		0.30	0.060	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Methylnaphthalene	0.022	J	0.090	0.012	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Methylphenol	ND		1.2	0.19	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Nitroaniline	ND		1.2	0.24	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Nitrophenol	ND		0.30	0.078	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
3,3'-Dichlorobenzidine	ND		0.60	0.26	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
3-Nitroaniline	ND		1.2	0.29	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4,6-Dinitro-2-methylphenol	ND		2.0	0.48	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Bromophenyl phenyl ether	ND		0.30	0.084	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Chloro-3-methylphenol	ND		0.90	0.27	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Chloroaniline	ND		0.90	0.18	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Chlorophenyl phenyl ether	ND		0.30	0.084	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Nitroaniline	ND		1.2	0.36	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
4-Nitrophenol	ND		2.0	0.56	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Acenaphthene	ND		0.090	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Acenaphthylene	ND		0.090	0.024	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Acetophenone	ND		0.60	0.066	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Anthracene	ND		0.090	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Atrazine	ND		1.2	0.22	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzaldehyde	ND		0.60	0.14	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzo[a]anthracene	ND		0.090	0.020	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzo[a]pyrene	ND		0.090	0.056	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzo[b]fluoranthene	ND		0.090	0.039	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzo[g,h,i]perylene	ND		0.090	0.043	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Benzo[k]fluoranthene	ND		0.090	0.042	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Bis(2-chloroethoxy)methane	ND		0.60	0.072	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Bis(2-chloroethyl)ether	ND		0.60	0.072	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Bis(2-ethylhexyl) phthalate	ND		0.42	0.31	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Butyl benzyl phthalate	ND		0.42	0.13	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		2.0	0.45	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Carbazole	ND		0.30	0.11	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Chrysene	ND		0.090	0.0089	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Dibenz(a,h)anthracene	ND		0.090	0.041	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Dibenzofuran	ND		0.30	0.078	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Diethyl phthalate	ND		0.42	0.19	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Dimethyl phthalate	ND		0.42	0.084	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Di-n-butyl phthalate	ND		0.42	0.30	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Di-n-octyl phthalate	ND		0.42	0.17	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Fluoranthene	ND		0.090	0.027	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Fluorene	ND		0.090	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Hexachlorobenzene	ND		0.090	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Hexachlorobutadiene	ND		0.30	0.072	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Hexachlorocyclopentadiene	ND		2.0	0.37	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Hexachloroethane	ND		0.30	0.054	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Indeno[1,2,3-cd]pyrene	ND		0.090	0.044	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Isophorone	ND		0.30	0.072	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
N-Nitrosodi-n-propylamine	ND		0.30	0.066	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
N-Nitrosodiphenylamine	ND		0.30	0.072	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Naphthalene	0.048	J	0.090	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Nitrobenzene	ND		0.60	0.078	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Pentachlorophenol	ND		0.90	0.35	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Phenanthrene	ND		0.090	0.013	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Phenol	ND		0.30	0.048	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
Pyrene	ND		0.090	0.013	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
3 & 4 Methylphenol	ND		2.4	0.17	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1
2-Butoxyethanol	ND		0.42	0.39	mg/Kg	☼	03/20/23 09:24	03/22/23 13:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	03/20/23 09:24	03/22/23 13:45	1
Phenol-d5 (Surr)	96		26 - 120	03/20/23 09:24	03/22/23 13:45	1
Nitrobenzene-d5 (Surr)	68		25 - 120	03/20/23 09:24	03/22/23 13:45	1
2-Fluorophenol (Surr)	81		20 - 120	03/20/23 09:24	03/22/23 13:45	1
2-Fluorobiphenyl (Surr)	77		34 - 120	03/20/23 09:24	03/22/23 13:45	1
2,4,6-Tribromophenol (Surr)	70		10 - 120	03/20/23 09:24	03/22/23 13:45	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 18:22	1
Barium	0.0031	J	0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 18:22	1
Cadmium	ND		0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 18:22	1
Chromium	ND		0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 18:22	1
Lead	ND		0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 18:22	1
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 18:22	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 18:22	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/20/23 14:00	03/21/23 14:15	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.7		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	0.3		0.1	0.1	%			03/20/23 11:50	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

Date Collected: 03/17/23 00:00

Matrix: Solid

Date Received: 03/17/23 19:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/20/23 14:32	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/20/23 14:32	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/20/23 14:32	1
Benzene	ND		0.025	0.00042	mg/L			03/20/23 14:32	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/20/23 14:32	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/20/23 14:32	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/20/23 14:32	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/20/23 14:32	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/20/23 14:32	1
Chloroform	ND		0.025	0.00047	mg/L			03/20/23 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120					03/20/23 14:32	1
Dibromofluoromethane (Surr)	93		71 - 121					03/20/23 14:32	1
4-Bromofluorobenzene (Surr)	109		80 - 120					03/20/23 14:32	1
1,2-Dichloroethane-d4 (Surr)	98		76 - 120					03/20/23 14:32	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/20/23 12:32	03/23/23 20:57	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/20/23 12:32	03/23/23 20:57	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/20/23 12:32	03/23/23 20:57	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/20/23 12:32	03/23/23 20:57	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/20/23 12:32	03/23/23 20:57	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/20/23 12:32	03/23/23 20:57	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/20/23 12:32	03/23/23 20:57	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/20/23 12:32	03/23/23 20:57	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/20/23 12:32	03/23/23 20:57	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/20/23 12:32	03/23/23 20:57	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/20/23 12:32	03/23/23 20:57	1
Pyridine	ND		0.0040	0.00036	mg/L		03/20/23 12:32	03/23/23 20:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	119		46 - 137				03/20/23 12:32	03/23/23 20:57	1
Phenol-d5 (Surr)	73		26 - 120				03/20/23 12:32	03/23/23 20:57	1
Nitrobenzene-d5 (Surr)	98		24 - 120				03/20/23 12:32	03/23/23 20:57	1
2-Fluorophenol (Surr)	80		19 - 120				03/20/23 12:32	03/23/23 20:57	1
2-Fluorobiphenyl (Surr)	106		33 - 120				03/20/23 12:32	03/23/23 20:57	1
2,4,6-Tribromophenol (Surr)	90		10 - 120				03/20/23 12:32	03/23/23 20:57	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/20/23 12:38	03/23/23 12:56	1
Endrin	ND		0.00050	0.0000065	mg/L		03/20/23 12:38	03/23/23 12:56	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/20/23 12:38	03/23/23 12:56	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/20/23 12:38	03/23/23 12:56	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/20/23 12:38	03/23/23 12:56	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/20/23 12:38	03/23/23 12:56	1
Toxaphene	ND		0.020	0.000058	mg/L		03/20/23 12:38	03/23/23 12:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

Date Collected: 03/17/23 00:00

Matrix: Solid

Date Received: 03/17/23 19:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	03/20/23 12:38	03/23/23 12:56	1
DCB Decachlorobiphenyl	72		10 - 145	03/20/23 12:38	03/23/23 12:56	1
Tetrachloro-m-xylene	62		10 - 123	03/20/23 12:38	03/23/23 12:56	1
Tetrachloro-m-xylene	65		10 - 123	03/20/23 12:38	03/23/23 12:56	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/22/23 21:04	03/23/23 11:26	1
2,4-D	ND		0.050	0.016	mg/L		03/22/23 21:04	03/23/23 11:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136	03/22/23 21:04	03/23/23 11:26	1
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136	03/22/23 21:04	03/23/23 11:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	99.9		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	0.08		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

Date Collected: 03/17/23 00:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		500	250	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1221	ND		500	300	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1232	ND		500	210	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1242	ND		500	190	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1248	ND		500	170	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1254	ND		500	210	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1260	ND		500	210	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1262	ND		500	220	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1
Aroclor-1268	ND		500	160	ug/Kg	☼	03/20/23 08:55	03/20/23 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	101		10 - 149	03/20/23 08:55	03/20/23 17:57	1
DCB Decachlorobiphenyl	99		10 - 174	03/20/23 08:55	03/20/23 17:57	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-182146-5

Date Collected: 03/17/23 14:00

Matrix: Solid

Date Received: 03/17/23 19:00

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	330	B	4.9	0.13	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,4,6,7,8-HpCDF	26	B	4.9	0.089	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,4,7,8-HxCDD	12		4.9	0.045	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,4,7,8-HxCDF	2.5	J B	4.9	0.064	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,4,7,8,9-HpCDF	1.6	J B	4.9	0.11	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,6,7,8-HxCDD	18	B	4.9	0.044	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,6,7,8-HxCDF	2.3	J	4.9	0.063	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,7,8-PeCDD	14	B	4.9	0.083	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,7,8-PeCDF	1.2	J	4.9	0.074	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,7,8,9-HxCDD	64	B	4.9	0.043	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
1,2,3,7,8,9-HxCDF	0.81	J B	4.9	0.078	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
2,3,4,6,7,8-HxCDF	3.9	J	4.9	0.061	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
2,3,4,7,8-PeCDF	6.5		4.9	0.055	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
2,3,7,8-TCDD	2.8		0.97	0.012	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
2,3,7,8-TCDF	1.1		0.97	0.043	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
OCDD	2400	B	9.7	0.13	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
OCDF	44		9.7	0.023	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total HxCDD	370	B	4.9	0.044	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total HxCDF	49	B	4.9	0.066	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total HpCDD	720	B	4.9	0.13	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total HpCDF	57	B	4.9	0.099	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total PeCDD	130	B	4.9	0.083	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total PeCDF	71	B	4.9	0.065	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total TCDD	32	I B	0.97	0.012	ng/Kg		03/27/23 09:45	03/29/23 12:16	1
Total TCDF	33	I	0.97	0.043	ng/Kg		03/27/23 09:45	03/29/23 12:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	73		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-OCDD	80		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-2,3,7,8-TCDF	69		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-2,3,7,8-TCDD	70		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-2,3,4,7,8-PeCDF	74		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-2,3,4,6,7,8-HxCDF	72		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,7,8,9-HxCDF	70		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,7,8,9-HxCDD	76		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,7,8-PeCDF	69		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,7,8-PeCDD	70		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,6,7,8-HxCDF	74		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,6,7,8-HxCDD	75		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,4,7,8,9-HpCDF	72		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,4,7,8-HxCDF	71		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,4,7,8-HxCDD	72		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,4,6,7,8-HpCDF	73		40 - 135	03/27/23 09:45	03/29/23 12:16	1
13C-1,2,3,4,6,7,8-HpCDD	73		40 - 135	03/27/23 09:45	03/29/23 12:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	31.3		1.0	1.0	%			03/22/23 09:53	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 76.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0042	0.0015	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,1,2,2-Tetrachloroethane	ND		0.0042	0.0012	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0042	0.0011	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,1,2-Trichloroethane	ND		0.0042	0.00095	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,1-Dichloroethane	ND		0.0042	0.00058	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,1-Dichloroethene	ND		0.0042	0.0015	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,2,4-Trichlorobenzene	ND		0.0042	0.0021	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,2-Dibromo-3-Chloropropane	ND		0.0084	0.0030	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Ethylene Dibromide	ND		0.0042	0.00065	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,2-Dichlorobenzene	ND		0.0042	0.00094	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,2-Dichloroethane	ND		0.0042	0.00065	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,2-Dichloropropane	ND		0.0042	0.00072	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,3-Dichlorobenzene	ND		0.0042	0.00069	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
1,4-Dichlorobenzene	ND		0.0042	0.00074	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
2-Butanone (MEK)	ND		0.017	0.0030	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
2-Hexanone	ND		0.017	0.0034	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
4-Methyl-2-pentanone (MIBK)	ND		0.017	0.0031	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Acetone	ND		0.021	0.018	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Benzene	ND		0.0042	0.00059	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Dichlorobromomethane	ND		0.0042	0.0013	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Bromoform	ND		0.0042	0.0020	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Bromomethane	ND		0.0042	0.0035	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Carbon disulfide	ND		0.0042	0.00098	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Carbon tetrachloride	ND		0.0042	0.0027	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Chlorobenzene	ND		0.0042	0.00077	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Chloroethane	ND		0.0042	0.0023	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Chloroform	ND		0.0042	0.00066	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Chloromethane	ND		0.0042	0.0019	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
cis-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
cis-1,3-Dichloropropene	ND		0.0042	0.0024	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Cyclohexane	ND		0.0084	0.0012	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Chlorodibromomethane	ND		0.0042	0.0023	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Dichlorodifluoromethane	ND		0.0042	0.00079	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Ethylbenzene	ND		0.0042	0.00088	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Isopropylbenzene	ND		0.0042	0.0016	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Methyl acetate	ND		0.021	0.0029	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Methyl tert-butyl ether	ND		0.0042	0.0017	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Methylcyclohexane	ND		0.0084	0.0010	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Methylene Chloride	ND		0.021	0.010	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Styrene	ND		0.0042	0.00097	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Tetrachloroethene	ND		0.0042	0.00061	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Toluene	ND		0.0042	0.00065	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
trans-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
trans-1,3-Dichloropropene	ND		0.0042	0.0031	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Trichloroethene	ND		0.0042	0.00053	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Trichlorofluoromethane	ND		0.0042	0.0023	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Vinyl chloride	ND		0.0042	0.0015	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Xylenes, Total	ND		0.0084	0.0013	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1
Butyl acrylate	ND		0.042	0.016	mg/Kg	✳	03/17/23 20:00	03/21/23 00:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 76.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0084	0.0026	mg/Kg	☼	03/17/23 20:00	03/21/23 00:24	1
2-Ethylhexyl acrylate	ND		0.042	0.020	mg/Kg	☼	03/17/23 20:00	03/21/23 00:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	128	S1+	56 - 125				03/17/23 20:00	03/21/23 00:24	1
Dibromofluoromethane (Surr)	109		41 - 138				03/17/23 20:00	03/21/23 00:24	1
4-Bromofluorobenzene (Surr)	135		41 - 143				03/17/23 20:00	03/21/23 00:24	1
1,2-Dichloroethane-d4 (Surr)	123		58 - 125				03/17/23 20:00	03/21/23 00:24	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.031	J	0.066	0.022	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4,5-Trichlorophenol	ND		0.20	0.091	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4,6-Trichlorophenol	ND		0.20	0.084	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4-Dichlorophenol	ND		0.20	0.058	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4-Dimethylphenol	ND		0.20	0.053	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4-Dinitrophenol	ND	F1	0.43	0.19	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,4-Dinitrotoluene	ND		0.26	0.082	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2,6-Dinitrotoluene	ND		0.26	0.074	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Chloronaphthalene	ND		0.066	0.018	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Chlorophenol	ND		0.066	0.013	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Methylnaphthalene	0.30		0.020	0.0026	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Methylphenol	ND		0.26	0.041	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Nitroaniline	ND		0.26	0.053	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Nitrophenol	ND		0.066	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
3,3'-Dichlorobenzidine	ND	F1	0.13	0.057	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
3-Nitroaniline	ND		0.26	0.065	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4,6-Dinitro-2-methylphenol	ND	F1	0.43	0.11	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Bromophenyl phenyl ether	ND		0.066	0.018	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Chloro-3-methylphenol	ND		0.20	0.059	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Chloroaniline	ND		0.20	0.040	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Chlorophenyl phenyl ether	ND		0.066	0.018	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Nitroaniline	ND		0.26	0.079	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
4-Nitrophenol	ND		0.43	0.12	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Acenaphthene	0.023		0.020	0.0038	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Acenaphthylene	0.027		0.020	0.0053	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Acetophenone	ND		0.13	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Anthracene	0.047		0.020	0.0032	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Atrazine	ND		0.26	0.047	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzaldehyde	ND		0.13	0.030	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzo[a]anthracene	0.16		0.020	0.0045	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzo[a]pyrene	0.16		0.020	0.012	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzo[b]fluoranthene	0.29		0.020	0.0086	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzo[g,h,i]perylene	0.093		0.020	0.0094	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Benzo[k]fluoranthene	0.058		0.020	0.0091	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Bis(2-chloroethoxy)methane	ND		0.13	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Bis(2-chloroethyl)ether	ND		0.13	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Bis(2-ethylhexyl) phthalate	ND		0.092	0.067	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Butyl benzyl phthalate	ND		0.092	0.029	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 76.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.43	0.099	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Carbazole	0.029	J	0.066	0.025	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Chrysene	0.22	F1	0.020	0.0020	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Dibenz(a,h)anthracene	0.031		0.020	0.0091	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Dibenzofuran	0.11		0.066	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Diethyl phthalate	ND		0.092	0.041	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Dimethyl phthalate	ND		0.092	0.018	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Di-n-butyl phthalate	ND		0.092	0.067	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Di-n-octyl phthalate	ND		0.092	0.037	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Fluoranthene	0.32	F2 F1	0.020	0.0059	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Fluorene	0.022		0.020	0.0036	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Hexachlorobenzene	ND		0.020	0.0038	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Hexachlorobutadiene	ND		0.066	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Hexachlorocyclopentadiene	ND	F1	0.43	0.082	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Hexachloroethane	ND		0.066	0.012	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Indeno[1,2,3-cd]pyrene	0.091		0.020	0.0097	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Isophorone	ND		0.066	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
N-Nitrosodi-n-propylamine	ND		0.066	0.014	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
N-Nitrosodiphenylamine	ND		0.066	0.016	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Naphthalene	0.21		0.020	0.0032	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Nitrobenzene	ND		0.13	0.017	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Pentachlorophenol	ND		0.20	0.076	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Phenanthrene	0.30	F2 F1	0.020	0.0029	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Phenol	ND		0.066	0.011	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
Pyrene	0.29	F2 F1	0.020	0.0028	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
3 & 4 Methylphenol	ND		0.53	0.038	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1
2-Butoxyethanol	ND	F2	0.092	0.086	mg/Kg	☼	03/20/23 09:24	03/22/23 19:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	81		46 - 137	03/20/23 09:24	03/22/23 19:02	1
Phenol-d5 (Surr)	76		26 - 120	03/20/23 09:24	03/22/23 19:02	1
Nitrobenzene-d5 (Surr)	54		25 - 120	03/20/23 09:24	03/22/23 19:02	1
2-Fluorophenol (Surr)	73		20 - 120	03/20/23 09:24	03/22/23 19:02	1
2-Fluorobiphenyl (Surr)	71		34 - 120	03/20/23 09:24	03/22/23 19:02	1
2,4,6-Tribromophenol (Surr)	71		10 - 120	03/20/23 09:24	03/22/23 19:02	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0081	J B	0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 18:27	1
Barium	0.68		0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 18:27	1
Cadmium	0.010	J	0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 18:27	1
Chromium	0.0042	J	0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 18:27	1
Lead	0.0070	J	0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 18:27	1
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 18:27	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 18:27	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00016	J	0.0020	0.00013	mg/L		03/20/23 14:00	03/21/23 14:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 76.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.0		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	24.0		0.1	0.1	%			03/20/23 11:50	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-182146-1	WC-VB1402-PLASTIC PELLETS	128 *3 S1+	98	157 *3 S1+	107
240-182146-2	WC-VB1344-PLASTIC PELLETS	129 S1+	112	162 S1+ *3	121
240-182146-3	WC-VB1108-PLASTIC PELLETS	131 S1+	113	170 S1+ *3	124
240-182146-6	WC-SB1597-SOIL & DEBRIS	128 S1+	109	135	123
LCS 240-566130/5	Lab Control Sample	116	107	118	111
LCS 240-566249/3	Lab Control Sample	113	105	113	110
MB 240-566125/1-A	Method Blank	114	104	116	113
MB 240-566125/3-A	Method Blank	114	105	116	116

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-566055/11	Lab Control Sample	103	99	112	100

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-182146-4	WC-COMP-PLASTIC PELLETS	99	93	109	98
240-182146-4 MS	WC-COMP-PLASTIC PELLETS	100	95	111	97
240-182146-4 MSD	WC-COMP-PLASTIC PELLETS	102	97	113	97
LB 240-565958/1-A MB	Method Blank	99	92	107	99

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-182146-1	WC-VB1402-PLASTIC PELLETS	97	78	58	69	73	72
240-182146-2	WC-VB1344-PLASTIC PELLETS	82	79	55	66	70	71
240-182146-3	WC-VB1108-PLASTIC PELLETS	89	96	68	81	77	70
240-182146-6	WC-SB1597-SOIL & DEBRIS	81	76	54	73	71	71
240-182146-6 MS	WC-SB1597-SOIL & DEBRIS	90	71	51	54	73	71
240-182146-6 MSD	WC-SB1597-SOIL & DEBRIS	83	85	61	76	84	70
LCS 240-566028/2-A	Lab Control Sample	103	80	72	79	85	87
MB 240-566028/1-A	Method Blank	100	75	71	62	82	36

Surrogate Legend

- TPHL = Terphenyl-d14 (Surr)
- PHL = Phenol-d5 (Surr)
- NBZ = Nitrobenzene-d5 (Surr)
- 2FP = 2-Fluorophenol (Surr)
- FBP = 2-Fluorobiphenyl (Surr)
- TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-566085/13-A	Lab Control Sample	111	70	90	73	97	90
MB 240-566085/12-A	Method Blank	104	61	87	69	97	82

Surrogate Legend

- TPHL = Terphenyl-d14 (Surr)
- PHL = Phenol-d5 (Surr)
- NBZ = Nitrobenzene-d5 (Surr)
- 2FP = 2-Fluorophenol (Surr)
- FBP = 2-Fluorobiphenyl (Surr)
- TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182146-4	WC-COMP-PLASTIC PELLETS	119	73	98	80	106	90

Surrogate Legend

- TPHL = Terphenyl-d14 (Surr)
- PHL = Phenol-d5 (Surr)
- NBZ = Nitrobenzene-d5 (Surr)
- 2FP = 2-Fluorophenol (Surr)
- FBP = 2-Fluorobiphenyl (Surr)
- TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-566087/11-A	Lab Control Sample	75	78	63	67
MB 240-566087/10-A	Method Blank	74	78	65	69

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182146-4	WC-COMP-PLASTIC PELLETS	73	72	62	65

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX1 (10-149)	DCBP1 (10-174)
240-182146-4	WC-COMP-PLASTIC PELLETS	101	99
LCS 240-565996/2-A	Lab Control Sample	119	132
MB 240-565996/1-A	Method Blank	85	122

Surrogate Legend
 TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-356471/2-A	Lab Control Sample	66	73
LCSD 410-356471/3-A	Lab Control Sample Dup	70	73
MB 410-356471/1-A	Method Blank	51	57

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
240-182146-4	WC-COMP-PLASTIC PELLETS	60	66

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 240-566055/11
Matrix: Solid
Analysis Batch: 566055

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.06		mg/L		106	74 - 127
1,2-Dichloroethane	1.00	0.962		mg/L		96	72 - 120
2-Butanone (MEK)	2.00	1.95		mg/L		98	68 - 130
Benzene	1.00	1.06		mg/L		106	80 - 121
Carbon tetrachloride	1.00	0.885		mg/L		89	69 - 120
Chlorobenzene	1.00	1.03		mg/L		103	80 - 120
Chloroform	1.00	1.04		mg/L		104	75 - 120
Tetrachloroethene	1.00	0.958		mg/L		96	74 - 120
Trichloroethene	1.00	0.906		mg/L		91	75 - 120
Vinyl chloride	1.00	1.06		mg/L		106	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	99		71 - 121
4-Bromofluorobenzene (Surr)	112		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		76 - 120

Lab Sample ID: MB 240-566125/1-A
Matrix: Solid
Analysis Batch: 566130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Acetone	ND		0.025	0.021	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/20/23 22:43	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/1-A
Matrix: Solid
Analysis Batch: 566130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloroform	ND		0.0050	0.00079	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Butyl acrylate	ND		0.050	0.019	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg		03/20/23 17:03	03/20/23 22:43	1
2-Ethylhexyl acrylate	ND		0.050	0.024	mg/Kg		03/20/23 17:03	03/20/23 22:43	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	114		56 - 125	03/20/23 17:03	03/20/23 22:43	1
Dibromofluoromethane (Surr)	104		41 - 138	03/20/23 17:03	03/20/23 22:43	1
4-Bromofluorobenzene (Surr)	116		41 - 143	03/20/23 17:03	03/20/23 22:43	1
1,2-Dichloroethane-d4 (Surr)	113		58 - 125	03/20/23 17:03	03/20/23 22:43	1

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Acetone	ND		0.025	0.021	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Butyl acrylate	ND		0.050	0.019	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Ethylhexyl acrylate	ND		0.050	0.024	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		56 - 125	03/20/23 17:03	03/21/23 19:25	1
Dibromofluoromethane (Surr)	105		41 - 138	03/20/23 17:03	03/21/23 19:25	1
4-Bromofluorobenzene (Surr)	116		41 - 143	03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/20/23 17:03	03/21/23 19:25	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566130/5

Matrix: Solid

Analysis Batch: 566130

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0309		mg/Kg		123	74 - 136
1,1,2,2-Tetrachloroethane	0.0250	0.0292		mg/Kg		117	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0269		mg/Kg		108	64 - 148
1,1,2-Trichloroethane	0.0250	0.0284		mg/Kg		113	79 - 120
1,1-Dichloroethane	0.0250	0.0269		mg/Kg		108	74 - 121
1,1-Dichloroethene	0.0250	0.0278		mg/Kg		111	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0253		mg/Kg		101	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0257		mg/Kg		103	52 - 133
Ethylene Dibromide	0.0250	0.0272		mg/Kg		109	80 - 121
1,2-Dichlorobenzene	0.0250	0.0271		mg/Kg		108	73 - 120
1,2-Dichloroethane	0.0250	0.0281		mg/Kg		112	71 - 123
1,2-Dichloropropane	0.0250	0.0259		mg/Kg		103	76 - 126
1,3-Dichlorobenzene	0.0250	0.0270		mg/Kg		108	73 - 120
1,4-Dichlorobenzene	0.0250	0.0269		mg/Kg		108	74 - 120
2-Butanone (MEK)	0.0500	0.0558		mg/Kg		112	63 - 142
2-Hexanone	0.0500	0.0605		mg/Kg		121	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0564		mg/Kg		113	62 - 142
Acetone	0.0500	0.0745		mg/Kg		149	58 - 160
Benzene	0.0250	0.0284		mg/Kg		113	76 - 121
Dichlorobromomethane	0.0250	0.0282		mg/Kg		113	71 - 138
Bromoform	0.0250	0.0245		mg/Kg		98	57 - 140
Bromomethane	0.0250	0.0293		mg/Kg		117	10 - 171
Carbon disulfide	0.0250	0.0261		mg/Kg		104	43 - 152
Carbon tetrachloride	0.0250	0.0291		mg/Kg		116	64 - 144
Chlorobenzene	0.0250	0.0276		mg/Kg		110	80 - 120
Chloroethane	0.0250	0.0238		mg/Kg		95	11 - 164
Chloroform	0.0250	0.0287		mg/Kg		115	78 - 120
Chloromethane	0.0250	0.0227		mg/Kg		91	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0279		mg/Kg		112	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0261		mg/Kg		104	70 - 133
Cyclohexane	0.0250	0.0268		mg/Kg		107	65 - 137
Chlorodibromomethane	0.0250	0.0259		mg/Kg		103	68 - 131
Dichlorodifluoromethane	0.0250	0.0309		mg/Kg		124	21 - 150
Ethylbenzene	0.0250	0.0283		mg/Kg		113	80 - 120
Isopropylbenzene	0.0250	0.0290		mg/Kg		116	80 - 130
Methyl acetate	0.0500	0.0471		mg/Kg		94	60 - 133
Methyl tert-butyl ether	0.0250	0.0266		mg/Kg		106	70 - 130
Methylcyclohexane	0.0250	0.0278		mg/Kg		111	70 - 138
Methylene Chloride	0.0250	0.0285		mg/Kg		114	71 - 124
Styrene	0.0250	0.0288		mg/Kg		115	75 - 140
Tetrachloroethene	0.0250	0.0286		mg/Kg		114	76 - 127
Toluene	0.0250	0.0293		mg/Kg		117	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0272		mg/Kg		109	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0284		mg/Kg		114	61 - 121
Trichloroethene	0.0250	0.0271		mg/Kg		108	74 - 130
Trichlorofluoromethane	0.0250	0.0291		mg/Kg		117	50 - 154
Vinyl chloride	0.0250	0.0250		mg/Kg		100	49 - 146
Xylenes, Total	0.0500	0.0561		mg/Kg		112	80 - 122

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566130/5
Matrix: Solid
Analysis Batch: 566130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m-Xylene & p-Xylene	0.0250	0.0283		mg/Kg		113	80 - 122
o-Xylene	0.0250	0.0278		mg/Kg		111	80 - 124
Butyl acrylate	0.100	0.107		mg/Kg		107	10 - 120
Methyl acrylate	0.100	0.117		mg/Kg		117	10 - 120
2-Ethylhexyl acrylate	0.100	0.0857		mg/Kg		86	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	116		56 - 125
Dibromofluoromethane (Surr)	107		41 - 138
4-Bromofluorobenzene (Surr)	118		41 - 143
1,2-Dichloroethane-d4 (Surr)	111		58 - 125

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0278		mg/Kg		111	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0277		mg/Kg		111	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0241		mg/Kg		96	64 - 148
1,1,2-Trichloroethane	0.0250	0.0271		mg/Kg		109	79 - 120
1,1-Dichloroethane	0.0250	0.0243		mg/Kg		97	74 - 121
1,1-Dichloroethene	0.0250	0.0263		mg/Kg		105	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0251		mg/Kg		101	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0246		mg/Kg		98	52 - 133
Ethylene Dibromide	0.0250	0.0261		mg/Kg		105	80 - 121
1,2-Dichlorobenzene	0.0250	0.0261		mg/Kg		104	73 - 120
1,2-Dichloroethane	0.0250	0.0259		mg/Kg		104	71 - 123
1,2-Dichloropropane	0.0250	0.0243		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	0.0250	0.0262		mg/Kg		105	73 - 120
1,4-Dichlorobenzene	0.0250	0.0264		mg/Kg		106	74 - 120
2-Butanone (MEK)	0.0500	0.0524		mg/Kg		105	63 - 142
2-Hexanone	0.0500	0.0552		mg/Kg		110	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0537		mg/Kg		107	62 - 142
Acetone	0.0500	0.0703		mg/Kg		141	58 - 160
Benzene	0.0250	0.0256		mg/Kg		102	76 - 121
Dichlorobromomethane	0.0250	0.0252		mg/Kg		101	71 - 138
Bromoform	0.0250	0.0232		mg/Kg		93	57 - 140
Bromomethane	0.0250	0.0252		mg/Kg		101	10 - 171
Carbon disulfide	0.0250	0.0248		mg/Kg		99	43 - 152
Carbon tetrachloride	0.0250	0.0278		mg/Kg		111	64 - 144
Chlorobenzene	0.0250	0.0258		mg/Kg		103	80 - 120
Chloroethane	0.0250	0.0223		mg/Kg		89	11 - 164
Chloroform	0.0250	0.0268		mg/Kg		107	78 - 120
Chloromethane	0.0250	0.0216		mg/Kg		86	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0258		mg/Kg		103	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0246		mg/Kg		99	70 - 133
Cyclohexane	0.0250	0.0243		mg/Kg		97	65 - 137

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorodibromomethane	0.0250	0.0252		mg/Kg		101	68 - 131
Dichlorodifluoromethane	0.0250	0.0278		mg/Kg		111	21 - 150
Ethylbenzene	0.0250	0.0264		mg/Kg		105	80 - 120
Isopropylbenzene	0.0250	0.0271		mg/Kg		108	80 - 130
Methyl acetate	0.0500	0.0451		mg/Kg		90	60 - 133
Methyl tert-butyl ether	0.0250	0.0249		mg/Kg		99	70 - 130
Methylcyclohexane	0.0250	0.0248		mg/Kg		99	70 - 138
Methylene Chloride	0.0250	0.0262		mg/Kg		105	71 - 124
Styrene	0.0250	0.0267		mg/Kg		107	75 - 140
Tetrachloroethene	0.0250	0.0267		mg/Kg		107	76 - 127
Toluene	0.0250	0.0269		mg/Kg		108	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0248		mg/Kg		99	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0269		mg/Kg		108	61 - 121
Trichloroethene	0.0250	0.0247		mg/Kg		99	74 - 130
Trichlorofluoromethane	0.0250	0.0263		mg/Kg		105	50 - 154
Vinyl chloride	0.0250	0.0230		mg/Kg		92	49 - 146
Xylenes, Total	0.0500	0.0522		mg/Kg		104	80 - 122
m-Xylene & p-Xylene	0.0250	0.0262		mg/Kg		105	80 - 122
o-Xylene	0.0250	0.0260		mg/Kg		104	80 - 124
Butyl acrylate	0.100	0.106		mg/Kg		106	10 - 120
Methyl acrylate	0.100	0.106		mg/Kg		106	10 - 120
2-Ethylhexyl acrylate	0.100	0.0853		mg/Kg		85	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	113		56 - 125
Dibromofluoromethane (Surr)	105		41 - 138
4-Bromofluorobenzene (Surr)	113		41 - 143
1,2-Dichloroethane-d4 (Surr)	110		58 - 125

Lab Sample ID: LB 240-565958/1-A MB
Matrix: Solid
Analysis Batch: 566055

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/20/23 13:45	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/20/23 13:45	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/20/23 13:45	1
Benzene	ND		0.025	0.00042	mg/L			03/20/23 13:45	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/20/23 13:45	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/20/23 13:45	1
Chloroform	ND		0.025	0.00047	mg/L			03/20/23 13:45	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/20/23 13:45	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/20/23 13:45	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/20/23 13:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/20/23 13:45	1
Dibromofluoromethane (Surr)	92		71 - 121		03/20/23 13:45	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-565958/1-A MB
Matrix: Solid
Analysis Batch: 566055

Client Sample ID: Method Blank
Prep Type: TCLP

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	107		80 - 120		03/20/23 13:45	1
1,2-Dichloroethane-d4 (Surr)	99		76 - 120		03/20/23 13:45	1

Lab Sample ID: 240-182146-4 MS
Matrix: Solid
Analysis Batch: 566055

Client Sample ID: WC-COMP-PLASTIC PELLETS
Prep Type: TCLP

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,1-Dichloroethene	ND		1.00	1.01		mg/L		101	72 - 127
1,2-Dichloroethane	ND		1.00	0.944		mg/L		94	70 - 120
2-Butanone (MEK)	ND		2.00	1.95		mg/L		98	76 - 127
Benzene	ND		1.00	1.04		mg/L		104	80 - 124
Carbon tetrachloride	ND		1.00	0.872		mg/L		87	63 - 120
Chlorobenzene	ND		1.00	0.995		mg/L		100	80 - 120
Chloroform	ND		1.00	1.01		mg/L		101	75 - 121
Tetrachloroethene	ND		1.00	0.917		mg/L		92	68 - 120
Trichloroethene	ND		1.00	0.882		mg/L		88	70 - 120
Vinyl chloride	ND		1.00	1.04		mg/L		104	55 - 144

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	95		71 - 121
4-Bromofluorobenzene (Surr)	111		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		76 - 120

Lab Sample ID: 240-182146-4 MSD
Matrix: Solid
Analysis Batch: 566055

Client Sample ID: WC-COMP-PLASTIC PELLETS
Prep Type: TCLP

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,1-Dichloroethene	ND		1.00	1.02		mg/L		102	72 - 127	0	11
1,2-Dichloroethane	ND		1.00	0.936		mg/L		94	70 - 120	1	10
2-Butanone (MEK)	ND		2.00	1.97		mg/L		99	76 - 127	1	17
Benzene	ND		1.00	1.04		mg/L		104	80 - 124	1	10
Carbon tetrachloride	ND		1.00	0.882		mg/L		88	63 - 120	1	11
Chlorobenzene	ND		1.00	0.996		mg/L		100	80 - 120	0	10
Chloroform	ND		1.00	0.997		mg/L		100	75 - 121	2	10
Tetrachloroethene	ND		1.00	0.928		mg/L		93	68 - 120	1	10
Trichloroethene	ND		1.00	0.893		mg/L		89	70 - 120	1	10
Vinyl chloride	ND		1.00	1.04		mg/L		104	55 - 144	0	11

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Toluene-d8 (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	97		71 - 121
4-Bromofluorobenzene (Surr)	113		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		76 - 120

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566028/1-A
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Atrazine	ND		0.20	0.036	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Carbazole	ND		0.050	0.019	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/20/23 09:24	03/22/23 10:29	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566028/1-A
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566028

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Isophorone	ND		0.050	0.012	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Phenol	ND		0.050	0.0080	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/20/23 09:24	03/22/23 10:29	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		03/20/23 09:24	03/22/23 10:29	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	100		46 - 137	03/20/23 09:24	03/22/23 10:29	1
Phenol-d5 (Surr)	75		26 - 120	03/20/23 09:24	03/22/23 10:29	1
Nitrobenzene-d5 (Surr)	71		25 - 120	03/20/23 09:24	03/22/23 10:29	1
2-Fluorophenol (Surr)	62		20 - 120	03/20/23 09:24	03/22/23 10:29	1
2-Fluorobiphenyl (Surr)	82		34 - 120	03/20/23 09:24	03/22/23 10:29	1
2,4,6-Tribromophenol (Surr)	36		10 - 120	03/20/23 09:24	03/22/23 10:29	1

Lab Sample ID: LCS 240-566028/2-A
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
bis (2-chloroisopropyl) ether	0.667	0.468		mg/Kg		70	38 - 120
2,4,5-Trichlorophenol	0.667	0.552		mg/Kg		83	50 - 120
2,4,6-Trichlorophenol	0.667	0.498		mg/Kg		75	50 - 120
2,4-Dichlorophenol	0.667	0.499		mg/Kg		75	50 - 120
2,4-Dimethylphenol	0.667	0.359		mg/Kg		54	24 - 120
2,4-Dinitrophenol	1.33	1.16		mg/Kg		87	19 - 132
2,4-Dinitrotoluene	0.667	0.675		mg/Kg		101	64 - 120
2,6-Dinitrotoluene	0.667	0.673		mg/Kg		101	62 - 120
2-Chloronaphthalene	0.667	0.561		mg/Kg		84	51 - 120
2-Chlorophenol	0.667	0.482		mg/Kg		72	47 - 120
2-Methylnaphthalene	0.667	0.499		mg/Kg		75	38 - 120
2-Methylphenol	0.667	0.480		mg/Kg		72	45 - 120
2-Nitroaniline	0.667	0.682		mg/Kg		102	57 - 120
2-Nitrophenol	0.667	0.481		mg/Kg		72	51 - 120
3,3'-Dichlorobenzidine	1.33	1.12		mg/Kg		84	27 - 199

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566028/2-A
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
3-Nitroaniline	0.667	0.616		mg/Kg		92	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.31		mg/Kg		98	46 - 126
4-Bromophenyl phenyl ether	0.667	0.548		mg/Kg		82	65 - 120
4-Chloro-3-methylphenol	0.667	0.507		mg/Kg		76	51 - 120
4-Chloroaniline	0.667	0.437		mg/Kg		66	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.589		mg/Kg		88	59 - 120
4-Nitroaniline	0.667	0.643		mg/Kg		96	48 - 128
4-Nitrophenol	1.33	1.42		mg/Kg		106	43 - 120
Acenaphthene	0.667	0.549		mg/Kg		82	52 - 120
Acenaphthylene	0.667	0.498		mg/Kg		75	52 - 120
Acetophenone	0.667	0.501		mg/Kg		75	47 - 120
Anthracene	0.667	0.582		mg/Kg		87	64 - 120
Atrazine	1.33	1.28		mg/Kg		96	71 - 125
Benzaldehyde	1.33	0.989		mg/Kg		74	42 - 120
Benzo[a]anthracene	0.667	0.656		mg/Kg		98	70 - 120
Benzo[a]pyrene	0.667	0.580		mg/Kg		87	63 - 125
Benzo[b]fluoranthene	0.667	0.573		mg/Kg		86	64 - 121
Benzo[g,h,i]perylene	0.667	0.607		mg/Kg		91	62 - 120
Benzo[k]fluoranthene	0.667	0.596		mg/Kg		89	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.509		mg/Kg		76	50 - 120
Bis(2-chloroethyl)ether	0.667	0.505		mg/Kg		76	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.758		mg/Kg		114	63 - 133
Butyl benzyl phthalate	0.667	0.752		mg/Kg		113	66 - 127
Caprolactam	1.33	1.31		mg/Kg		98	67 - 120
Carbazole	0.667	0.614		mg/Kg		92	61 - 129
Chrysene	0.667	0.656		mg/Kg		98	67 - 120
Dibenz(a,h)anthracene	0.667	0.604		mg/Kg		91	62 - 120
Dibenzofuran	0.667	0.599		mg/Kg		90	55 - 120
Diethyl phthalate	0.667	0.646		mg/Kg		97	61 - 120
Dimethyl phthalate	0.667	0.656		mg/Kg		98	64 - 120
Di-n-butyl phthalate	0.667	0.659		mg/Kg		99	70 - 129
Di-n-octyl phthalate	0.667	0.668		mg/Kg		100	64 - 129
Fluoranthene	0.667	0.631		mg/Kg		95	71 - 124
Fluorene	0.667	0.610		mg/Kg		92	58 - 120
Hexachlorobenzene	0.667	0.542		mg/Kg		81	59 - 120
Hexachlorobutadiene	0.667	0.408		mg/Kg		61	45 - 120
Hexachlorocyclopentadiene	0.667	0.374		mg/Kg		56	10 - 120
Hexachloroethane	0.667	0.438		mg/Kg		66	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.642		mg/Kg		96	65 - 122
Isophorone	0.667	0.513		mg/Kg		77	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.500		mg/Kg		75	48 - 120
N-Nitrosodiphenylamine	0.667	0.568		mg/Kg		85	64 - 120
Naphthalene	0.667	0.476		mg/Kg		71	34 - 120
Nitrobenzene	0.667	0.502		mg/Kg		75	48 - 120
Pentachlorophenol	1.33	0.712		mg/Kg		53	10 - 120
Phenanthrene	0.667	0.574		mg/Kg		86	60 - 120
Phenol	0.667	0.524		mg/Kg		79	48 - 120
Pyrene	0.667	0.659		mg/Kg		99	67 - 120
3 & 4 Methylphenol	0.667	0.510		mg/Kg		77	49 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566028/2-A
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butoxyethanol	0.667	0.500		mg/Kg		75	10 - 120
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
Terphenyl-d14 (Surr)	103		46 - 137				
Phenol-d5 (Surr)	80		26 - 120				
Nitrobenzene-d5 (Surr)	72		25 - 120				
2-Fluorophenol (Surr)	79		20 - 120				
2-Fluorobiphenyl (Surr)	85		34 - 120				
2,4,6-Tribromophenol (Surr)	87		10 - 120				

Lab Sample ID: 240-182146-6 MS
Matrix: Solid
Analysis Batch: 566308

Client Sample ID: WC-SB1597-SOIL & DEBRIS
Prep Type: Total/NA
Prep Batch: 566028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.031	J	0.879	0.707		mg/Kg	✱	77	29 - 120
bis (2-chloroisopropyl) ether	ND		0.879	0.391		mg/Kg	✱	45	10 - 120
2,4,5-Trichlorophenol	ND		0.879	0.637		mg/Kg	✱	72	35 - 120
2,4,6-Trichlorophenol	ND		0.879	0.525		mg/Kg	✱	60	18 - 120
2,4-Dichlorophenol	ND		0.879	0.633		mg/Kg	✱	72	21 - 120
2,4-Dimethylphenol	ND		0.879	0.507		mg/Kg	✱	58	10 - 120
2,4-Dinitrophenol	ND	F1	1.76	ND	F1	mg/Kg	✱	0	10 - 126
2,4-Dinitrotoluene	ND		0.879	0.775		mg/Kg	✱	88	46 - 120
2,6-Dinitrotoluene	ND		0.879	0.755		mg/Kg	✱	86	44 - 120
2-Chloronaphthalene	ND		0.879	0.645		mg/Kg	✱	73	33 - 120
2-Chlorophenol	ND		0.879	0.468		mg/Kg	✱	53	19 - 120
2-Methylnaphthalene	0.30		0.879	1.08		mg/Kg	✱	88	13 - 122
2-Methylphenol	ND		0.879	0.516		mg/Kg	✱	59	12 - 120
2-Nitroaniline	ND		0.879	0.953		mg/Kg	✱	108	36 - 122
2-Nitrophenol	ND		0.879	0.483		mg/Kg	✱	55	28 - 120
3,3'-Dichlorobenzidine	ND	F1	1.76	0.0594	J F1	mg/Kg	✱	3	10 - 179
3-Nitroaniline	ND		0.879	0.445		mg/Kg	✱	51	10 - 123
4,6-Dinitro-2-methylphenol	ND	F1	1.76	0.141	J F1	mg/Kg	✱	8	11 - 120
4-Bromophenyl phenyl ether	ND		0.879	0.598		mg/Kg	✱	68	49 - 120
4-Chloro-3-methylphenol	ND		0.879	0.727		mg/Kg	✱	83	35 - 120
4-Chloroaniline	ND		0.879	0.429		mg/Kg	✱	49	10 - 120
4-Chlorophenyl phenyl ether	ND		0.879	0.668		mg/Kg	✱	76	45 - 120
4-Nitroaniline	ND		0.879	0.387		mg/Kg	✱	44	13 - 129
4-Nitrophenol	ND		1.76	1.34		mg/Kg	✱	76	28 - 123
Acenaphthene	0.023		0.879	0.793		mg/Kg	✱	88	33 - 120
Acenaphthylene	0.027		0.879	0.812		mg/Kg	✱	89	39 - 120
Acetophenone	ND		0.879	0.475		mg/Kg	✱	54	11 - 120
Anthracene	0.047		0.879	0.891		mg/Kg	✱	96	30 - 127
Atrazine	ND		1.76	1.43		mg/Kg	✱	82	52 - 126
Benzaldehyde	ND		1.76	0.894		mg/Kg	✱	51	13 - 120
Benzo[a]anthracene	0.16		0.879	1.27		mg/Kg	✱	126	24 - 137
Benzo[a]pyrene	0.16		0.879	1.17		mg/Kg	✱	115	28 - 136
Benzo[b]fluoranthene	0.29		0.879	1.24		mg/Kg	✱	109	21 - 142

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182146-6 MS

Matrix: Solid

Analysis Batch: 566308

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Prep Type: Total/NA

Prep Batch: 566028

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Benzo[g,h,i]perylene	0.093		0.879	0.634		mg/Kg	⊛	62		10 - 144
Benzo[k]fluoranthene	0.058		0.879	1.12		mg/Kg	⊛	121		36 - 135
Bis(2-chloroethoxy)methane	ND		0.879	0.575		mg/Kg	⊛	65		25 - 120
Bis(2-chloroethyl)ether	ND		0.879	0.459		mg/Kg	⊛	52		16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.879	1.00		mg/Kg	⊛	114		37 - 143
Butyl benzyl phthalate	ND		0.879	0.988		mg/Kg	⊛	112		49 - 130
Caprolactam	ND		1.76	1.71		mg/Kg	⊛	97		37 - 127
Carbazole	0.029	J	0.879	0.903		mg/Kg	⊛	99		33 - 132
Chrysene	0.22	F1	0.879	1.40	F1	mg/Kg	⊛	135		28 - 129
Dibenz(a,h)anthracene	0.031		0.879	0.645		mg/Kg	⊛	70		10 - 132
Dibenzofuran	0.11		0.879	0.934		mg/Kg	⊛	94		33 - 120
Diethyl phthalate	ND		0.879	0.737		mg/Kg	⊛	84		48 - 120
Dimethyl phthalate	ND		0.879	0.781		mg/Kg	⊛	89		45 - 120
Di-n-butyl phthalate	ND		0.879	0.848		mg/Kg	⊛	96		40 - 137
Di-n-octyl phthalate	ND		0.879	0.930		mg/Kg	⊛	106		34 - 152
Fluoranthene	0.32	F2 F1	0.879	1.81	F1	mg/Kg	⊛	169		31 - 140
Fluorene	0.022		0.879	0.934		mg/Kg	⊛	104		43 - 120
Hexachlorobenzene	ND		0.879	0.589		mg/Kg	⊛	67		44 - 120
Hexachlorobutadiene	ND		0.879	0.386		mg/Kg	⊛	44		13 - 120
Hexachlorocyclopentadiene	ND	F1	0.879	ND	F1	mg/Kg	⊛	0		10 - 120
Hexachloroethane	ND		0.879	0.276		mg/Kg	⊛	31		10 - 120
Indeno[1,2,3-cd]pyrene	0.091		0.879	0.777		mg/Kg	⊛	78		10 - 139
Isophorone	ND		0.879	0.575		mg/Kg	⊛	65		27 - 120
N-Nitrosodi-n-propylamine	ND		0.879	0.455		mg/Kg	⊛	52		23 - 120
N-Nitrosodiphenylamine	ND		0.879	0.616		mg/Kg	⊛	70		30 - 128
Naphthalene	0.21		0.879	0.703		mg/Kg	⊛	57		10 - 120
Nitrobenzene	ND		0.879	0.483		mg/Kg	⊛	55		19 - 120
Pentachlorophenol	ND		1.76	0.804		mg/Kg	⊛	46		10 - 120
Phenanthrene	0.30	F2 F1	0.879	1.69	F1	mg/Kg	⊛	158		36 - 120
Phenol	ND		0.879	0.597		mg/Kg	⊛	68		10 - 120
Pyrene	0.29	F2 F1	0.879	1.74	F1	mg/Kg	⊛	165		31 - 134
3 & 4 Methylphenol	ND		0.879	0.598		mg/Kg	⊛	68		10 - 122
2-Butoxyethanol	ND	F2	0.879	0.491		mg/Kg	⊛	56		10 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	90		46 - 137
Phenol-d5 (Surr)	71		26 - 120
Nitrobenzene-d5 (Surr)	51		25 - 120
2-Fluorophenol (Surr)	54		20 - 120
2-Fluorobiphenyl (Surr)	73		34 - 120
2,4,6-Tribromophenol (Surr)	71		10 - 120

Lab Sample ID: 240-182146-6 MSD

Matrix: Solid

Analysis Batch: 566308

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Prep Type: Total/NA

Prep Batch: 566028

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						Limit	
1,1'-Biphenyl	0.031	J	0.887	0.689		mg/Kg	⊛	74		29 - 120	3	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182146-6 MSD

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566308

Prep Batch: 566028

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
bis (2-chloroisopropyl) ether	ND		0.887	0.549		mg/Kg	☼	62	10 - 120	33	45	
2,4,5-Trichlorophenol	ND		0.887	0.682		mg/Kg	☼	77	35 - 120	7	39	
2,4,6-Trichlorophenol	ND		0.887	0.595		mg/Kg	☼	67	18 - 120	13	45	
2,4-Dichlorophenol	ND		0.887	0.614		mg/Kg	☼	69	21 - 120	3	44	
2,4-Dimethylphenol	ND		0.887	0.428		mg/Kg	☼	48	10 - 120	17	45	
2,4-Dinitrophenol	ND	F1	1.77	ND	F1	mg/Kg	☼	0	10 - 126	NC	45	
2,4-Dinitrotoluene	ND		0.887	0.781		mg/Kg	☼	88	46 - 120	1	45	
2,6-Dinitrotoluene	ND		0.887	0.840		mg/Kg	☼	95	44 - 120	11	45	
2-Chloronaphthalene	ND		0.887	0.721		mg/Kg	☼	81	33 - 120	11	45	
2-Chlorophenol	ND		0.887	0.621		mg/Kg	☼	70	19 - 120	28	45	
2-Methylnaphthalene	0.30		0.887	1.07		mg/Kg	☼	86	13 - 122	1	45	
2-Methylphenol	ND		0.887	0.692		mg/Kg	☼	78	12 - 120	29	45	
2-Nitroaniline	ND		0.887	0.914		mg/Kg	☼	103	36 - 122	4	42	
2-Nitrophenol	ND		0.887	0.576		mg/Kg	☼	65	28 - 120	18	45	
3,3'-Dichlorobenzidine	ND	F1	1.77	ND	F1	mg/Kg	☼	0	10 - 179	NC	45	
3-Nitroaniline	ND		0.887	0.421		mg/Kg	☼	48	10 - 123	5	45	
4,6-Dinitro-2-methylphenol	ND	F1	1.77	0.170	J F1	mg/Kg	☼	10	11 - 120	18	40	
4-Bromophenyl phenyl ether	ND		0.887	0.635		mg/Kg	☼	72	49 - 120	6	42	
4-Chloro-3-methylphenol	ND		0.887	0.810		mg/Kg	☼	91	35 - 120	11	42	
4-Chloroaniline	ND		0.887	0.376		mg/Kg	☼	42	10 - 120	13	45	
4-Chlorophenyl phenyl ether	ND		0.887	0.701		mg/Kg	☼	79	45 - 120	5	44	
4-Nitroaniline	ND		0.887	0.292		mg/Kg	☼	33	13 - 129	28	38	
4-Nitrophenol	ND		1.77	1.50		mg/Kg	☼	85	28 - 123	11	45	
Acenaphthene	0.023		0.887	0.743		mg/Kg	☼	81	33 - 120	7	45	
Acenaphthylene	0.027		0.887	0.757		mg/Kg	☼	82	39 - 120	7	45	
Acetophenone	ND		0.887	0.666		mg/Kg	☼	75	11 - 120	33	45	
Anthracene	0.047		0.887	0.720		mg/Kg	☼	76	30 - 127	21	45	
Atrazine	ND		1.77	1.31		mg/Kg	☼	74	52 - 126	9	34	
Benzaldehyde	ND		1.77	1.12		mg/Kg	☼	63	13 - 120	22	45	
Benzo[a]anthracene	0.16		0.887	0.924		mg/Kg	☼	86	24 - 137	31	42	
Benzo[a]pyrene	0.16		0.887	0.869		mg/Kg	☼	80	28 - 136	30	41	
Benzo[b]fluoranthene	0.29		0.887	1.01		mg/Kg	☼	82	21 - 142	20	42	
Benzo[g,h,i]perylene	0.093		0.887	0.576		mg/Kg	☼	54	10 - 144	10	40	
Benzo[k]fluoranthene	0.058		0.887	0.883		mg/Kg	☼	93	36 - 135	24	44	
Bis(2-chloroethoxy)methane	ND		0.887	0.655		mg/Kg	☼	74	25 - 120	13	45	
Bis(2-chloroethyl)ether	ND		0.887	0.651		mg/Kg	☼	73	16 - 120	35	45	
Bis(2-ethylhexyl) phthalate	ND		0.887	0.965		mg/Kg	☼	109	37 - 143	4	38	
Butyl benzyl phthalate	ND		0.887	0.909		mg/Kg	☼	102	49 - 130	8	41	
Caprolactam	ND		1.77	1.64		mg/Kg	☼	93	37 - 127	4	45	
Carbazole	0.029	J	0.887	0.791		mg/Kg	☼	86	33 - 132	13	45	
Chrysene	0.22	F1	0.887	0.965		mg/Kg	☼	84	28 - 129	37	42	
Dibenz(a,h)anthracene	0.031		0.887	0.573		mg/Kg	☼	61	10 - 132	12	37	
Dibenzofuran	0.11		0.887	0.923		mg/Kg	☼	92	33 - 120	1	43	
Diethyl phthalate	ND		0.887	0.733		mg/Kg	☼	83	48 - 120	1	38	
Dimethyl phthalate	ND		0.887	0.717		mg/Kg	☼	81	45 - 120	8	43	
Di-n-butyl phthalate	ND		0.887	0.833		mg/Kg	☼	94	40 - 137	2	42	
Di-n-octyl phthalate	ND		0.887	0.881		mg/Kg	☼	99	34 - 152	5	39	
Fluoranthene	0.32	F2 F1	0.887	1.06	F2	mg/Kg	☼	84	31 - 140	52	45	
Fluorene	0.022		0.887	0.748		mg/Kg	☼	82	43 - 120	22	39	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182146-6 MSD

Matrix: Solid

Analysis Batch: 566308

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Prep Type: Total/NA

Prep Batch: 566028

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Hexachlorobenzene	ND		0.887	0.591		mg/Kg	☼	67	44 - 120	0	39
Hexachlorobutadiene	ND		0.887	0.500		mg/Kg	☼	56	13 - 120	26	45
Hexachlorocyclopentadiene	ND	F1	0.887	ND	F1	mg/Kg	☼	0	10 - 120	NC	45
Hexachloroethane	ND		0.887	0.417		mg/Kg	☼	47	10 - 120	41	45
Indeno[1,2,3-cd]pyrene	0.091		0.887	0.642		mg/Kg	☼	62	10 - 139	19	41
Isophorone	ND		0.887	0.648		mg/Kg	☼	73	27 - 120	12	45
N-Nitrosodi-n-propylamine	ND		0.887	0.619		mg/Kg	☼	70	23 - 120	30	45
N-Nitrosodiphenylamine	ND		0.887	0.584		mg/Kg	☼	66	30 - 128	5	44
Naphthalene	0.21		0.887	0.942		mg/Kg	☼	83	10 - 120	29	45
Nitrobenzene	ND		0.887	0.587		mg/Kg	☼	66	19 - 120	19	45
Pentachlorophenol	ND		1.77	0.891		mg/Kg	☼	50	10 - 120	10	45
Phenanthrene	0.30	F2 F1	0.887	0.993	F2	mg/Kg	☼	78	36 - 120	52	41
Phenol	ND		0.887	0.727		mg/Kg	☼	82	10 - 120	20	45
Pyrene	0.29	F2 F1	0.887	1.10	F2	mg/Kg	☼	91	31 - 134	45	43
3 & 4 Methylphenol	ND		0.887	0.663		mg/Kg	☼	75	10 - 122	10	45
2-Butoxyethanol	ND	F2	0.887	0.778	F2	mg/Kg	☼	88	10 - 120	45	40

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	83		46 - 137
Phenol-d5 (Surr)	85		26 - 120
Nitrobenzene-d5 (Surr)	61		25 - 120
2-Fluorophenol (Surr)	76		20 - 120
2-Fluorobiphenyl (Surr)	84		34 - 120
2,4,6-Tribromophenol (Surr)	70		10 - 120

Lab Sample ID: MB 240-566085/12-A

Matrix: Solid

Analysis Batch: 566310

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 566085

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/20/23 12:32	03/22/23 12:32	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/20/23 12:32	03/22/23 12:32	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/20/23 12:32	03/22/23 12:32	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/20/23 12:32	03/22/23 12:32	1
Pyridine	ND		0.0040	0.00036	mg/L		03/20/23 12:32	03/22/23 12:32	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/20/23 12:32	03/22/23 12:32	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/20/23 12:32	03/22/23 12:32	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/20/23 12:32	03/22/23 12:32	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/20/23 12:32	03/22/23 12:32	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/20/23 12:32	03/22/23 12:32	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/20/23 12:32	03/22/23 12:32	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/20/23 12:32	03/22/23 12:32	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	104		46 - 137	03/20/23 12:32	03/22/23 12:32	1
Phenol-d5 (Surr)	61		26 - 120	03/20/23 12:32	03/22/23 12:32	1
Nitrobenzene-d5 (Surr)	87		24 - 120	03/20/23 12:32	03/22/23 12:32	1
2-Fluorophenol (Surr)	69		19 - 120	03/20/23 12:32	03/22/23 12:32	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566085/12-A
Matrix: Solid
Analysis Batch: 566310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566085

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl (Surr)	97		33 - 120	03/20/23 12:32	03/22/23 12:32	1
2,4,6-Tribromophenol (Surr)	82		10 - 120	03/20/23 12:32	03/22/23 12:32	1

Lab Sample ID: LCS 240-566085/13-A
Matrix: Solid
Analysis Batch: 566310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566085

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0563		mg/L		70	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0673		mg/L		84	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0736		mg/L		92	51 - 120
2,4-Dinitrotoluene	0.0800	0.0748		mg/L		94	58 - 125
Pyridine	0.160	0.0387		mg/L		24	10 - 120
2-Methylphenol	0.0800	0.0596		mg/L		75	45 - 120
Hexachlorobenzene	0.0800	0.0717		mg/L		90	55 - 120
Hexachlorobutadiene	0.0800	0.0628		mg/L		79	41 - 120
Hexachloroethane	0.0800	0.0586		mg/L		73	39 - 120
Nitrobenzene	0.0800	0.0673		mg/L		84	47 - 120
Pentachlorophenol	0.160	0.0995		mg/L		62	19 - 132
3 & 4 Methylphenol	0.0800	0.0636		mg/L		79	40 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	111		46 - 137
Phenol-d5 (Surr)	70		26 - 120
Nitrobenzene-d5 (Surr)	90		24 - 120
2-Fluorophenol (Surr)	73		19 - 120
2-Fluorobiphenyl (Surr)	97		33 - 120
2,4,6-Tribromophenol (Surr)	90		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-566087/10-A
Matrix: Solid
Analysis Batch: 566467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566087

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/20/23 12:38	03/23/23 11:20	1
Endrin	ND		0.00050	0.0000065	mg/L		03/20/23 12:38	03/23/23 11:20	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/20/23 12:38	03/23/23 11:20	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/20/23 12:38	03/23/23 11:20	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/20/23 12:38	03/23/23 11:20	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/20/23 12:38	03/23/23 11:20	1
Toxaphene	ND		0.020	0.000058	mg/L		03/20/23 12:38	03/23/23 11:20	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	74		10 - 145	03/20/23 12:38	03/23/23 11:20	1
DCB Decachlorobiphenyl	78		10 - 145	03/20/23 12:38	03/23/23 11:20	1
Tetrachloro-m-xylene	65		10 - 123	03/20/23 12:38	03/23/23 11:20	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-566087/10-A
Matrix: Solid
Analysis Batch: 566467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566087

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	69		10 - 123	03/20/23 12:38	03/23/23 11:20	1

Lab Sample ID: LCS 240-566087/11-A
Matrix: Solid
Analysis Batch: 566467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566087

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Endrin	0.00100	0.000878		mg/L		88	36 - 120
Heptachlor	0.00100	0.000809		mg/L		81	29 - 120
Heptachlor epoxide	0.00100	0.000782		mg/L		78	36 - 120
gamma-BHC (Lindane)	0.00100	0.000802		mg/L		80	23 - 120
Methoxychlor	0.00100	0.00108		mg/L		108	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	75		10 - 145
DCB Decachlorobiphenyl	78		10 - 145
Tetrachloro-m-xylene	63		10 - 123
Tetrachloro-m-xylene	67		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-565996/1-A
Matrix: Solid
Analysis Batch: 566033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565996

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1221	ND		50	30	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1232	ND		50	21	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1242	ND		50	19	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1248	ND		50	17	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1254	ND		50	21	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1260	ND		50	21	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1262	ND		50	22	ug/Kg		03/20/23 08:55	03/20/23 15:22	1
Aroclor-1268	ND		50	16	ug/Kg		03/20/23 08:55	03/20/23 15:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	85		10 - 149	03/20/23 08:55	03/20/23 15:22	1
DCB Decachlorobiphenyl	122		10 - 174	03/20/23 08:55	03/20/23 15:22	1

Lab Sample ID: LCS 240-565996/2-A
Matrix: Solid
Analysis Batch: 566033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565996

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Aroclor-1016	1000	1080		ug/Kg		108	28 - 140
Aroclor-1260	1000	1210		ug/Kg		121	39 - 153

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-565996/2-A
Matrix: Solid
Analysis Batch: 566033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565996

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	119		10 - 149
DCB Decachlorobiphenyl	132		10 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-356471/1-A
Matrix: Solid
Analysis Batch: 356491

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 356471

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/22/23 21:04	03/23/23 05:51	1
2,4-D	ND		0.050	0.016	mg/L		03/22/23 21:04	03/23/23 05:51	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	51		26 - 136	03/22/23 21:04	03/23/23 05:51	1
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	03/22/23 21:04	03/23/23 05:51	1

Lab Sample ID: LCS 410-356471/2-A
Matrix: Solid
Analysis Batch: 356491

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 356471

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Silvex (2,4,5-TP)	0.00500	0.00383	J	mg/L		77	58 - 148
2,4-D	0.0502	0.0396	J	mg/L		79	42 - 147

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid (Surr)	66		26 - 136
2,4-Dichlorophenylacetic acid (Surr)	73		26 - 136

Lab Sample ID: LCSD 410-356471/3-A
Matrix: Solid
Analysis Batch: 356491

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 356471

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Silvex (2,4,5-TP)	0.00500	0.00390	J	mg/L		78	58 - 148	2	30
2,4-D	0.0502	0.0397	J	mg/L		79	42 - 147	0	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid (Surr)	70		26 - 136
2,4-Dichlorophenylacetic acid (Surr)	73		26 - 136

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-357694/1-A
Matrix: Solid
Analysis Batch: 358197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 357694

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	0.297	J I	5.0	0.053	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,4,6,7,8-HpCDF	0.0947	J I	5.0	0.023	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,4,7,8-HxCDD	ND		5.0	0.0056	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,4,7,8-HxCDF	0.0426	J I	5.0	0.0090	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,4,7,8,9-HpCDF	0.0700	J I	5.0	0.033	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,6,7,8-HxCDD	0.0333	J I	5.0	0.0057	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,6,7,8-HxCDF	ND		5.0	0.0087	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,7,8-PeCDD	0.0319	J I	5.0	0.010	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,7,8-PeCDF	ND		5.0	0.012	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,7,8,9-HxCDD	0.0602	J I	5.0	0.0059	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
1,2,3,7,8,9-HxCDF	0.0776	J I	5.0	0.011	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
2,3,4,6,7,8-HxCDF	ND		5.0	0.0083	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
2,3,4,7,8-PeCDF	ND		5.0	0.0095	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
2,3,7,8-TCDD	ND		1.0	0.0074	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
2,3,7,8-TCDF	ND		1.0	0.0064	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
OCDD	1.14	J I	10	0.0077	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
OCDF	ND		10	0.0077	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total HxCDD	0.261	J I	5.0	0.0057	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total HxCDF	0.160	J I	5.0	0.0092	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total HpCDD	0.297	J I	5.0	0.053	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total HpCDF	0.165	J I	5.0	0.028	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total PeCDD	0.0876	J I	5.0	0.010	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total PeCDF	0.0359	J I	5.0	0.011	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total TCDD	0.0474	J I	1.0	0.0074	ng/Kg		03/27/23 09:45	03/28/23 16:33	1
Total TCDF	ND		1.0	0.0064	ng/Kg		03/27/23 09:45	03/28/23 16:33	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-OCDF	51		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-OCDD	53		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-2,3,7,8-TCDF	49		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-2,3,7,8-TCDD	56		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-2,3,4,7,8-PeCDF	41		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-2,3,4,6,7,8-HxCDF	57		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,7,8,9-HxCDF	54		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,7,8,9-HxCDD	51		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,7,8-PeCDF	40		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,7,8-PeCDD	43		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,6,7,8-HxCDF	60		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,6,7,8-HxCDD	54		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,4,7,8,9-HpCDF	54		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,4,7,8-HxCDF	56		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,4,7,8-HxCDD	51		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,4,6,7,8-HpCDF	55		40 - 135	03/27/23 09:45	03/28/23 16:33	1
13C-1,2,3,4,6,7,8-HpCDD	49		40 - 135	03/27/23 09:45	03/28/23 16:33	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-357694/2-A
Matrix: Solid
Analysis Batch: 358197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 357694

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,3,4,6,7,8-HpCDD	100	112		ng/Kg		112	77 - 127
1,2,3,4,6,7,8-HpCDF	100	110		ng/Kg		110	77 - 127
1,2,3,4,7,8-HxCDD	100	122		ng/Kg		122	77 - 127
1,2,3,4,7,8-HxCDF	100	117		ng/Kg		117	77 - 129
1,2,3,4,7,8,9-HpCDF	100	104		ng/Kg		104	77 - 127
1,2,3,6,7,8-HxCDD	100	115		ng/Kg		115	76 - 127
1,2,3,6,7,8-HxCDF	100	111		ng/Kg		111	77 - 129
1,2,3,7,8-PeCDD	100	113		ng/Kg		113	77 - 127
1,2,3,7,8-PeCDF	100	115		ng/Kg		115	75 - 129
1,2,3,7,8,9-HxCDD	100	124		ng/Kg		124	76 - 127
1,2,3,7,8,9-HxCDF	100	116		ng/Kg		116	76 - 126
2,3,4,6,7,8-HxCDF	100	107		ng/Kg		107	78 - 128
2,3,4,7,8-PeCDF	100	115		ng/Kg		115	75 - 131
2,3,7,8-TCDD	20.0	22.4		ng/Kg		112	68 - 142
2,3,7,8-TCDF	20.0	22.2		ng/Kg		111	70 - 133
OCDD	200	230		ng/Kg		115	77 - 125
OCDF	200	232		ng/Kg		116	75 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-OCDF	72		40 - 135
13C-OCDD	74		40 - 135
13C-2,3,7,8-TCDF	57		40 - 135
13C-2,3,7,8-TCDD	63		40 - 135
13C-2,3,4,7,8-PeCDF	49		40 - 135
13C-2,3,4,6,7,8-HxCDF	71		40 - 135
13C-1,2,3,7,8,9-HxCDF	71		40 - 135
13C-1,2,3,7,8,9-HxCDD	68		40 - 135
13C-1,2,3,7,8-PeCDF	47		40 - 135
13C-1,2,3,7,8-PeCDD	48		40 - 135
13C-1,2,3,6,7,8-HxCDF	76		40 - 135
13C-1,2,3,6,7,8-HxCDD	71		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	75		40 - 135
13C-1,2,3,4,7,8-HxCDF	67		40 - 135
13C-1,2,3,4,7,8-HxCDD	64		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	76		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	69		40 - 135

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-566090/2-A
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 17:35	1
Barium	ND		0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 17:35	1
Cadmium	ND		0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 17:35	1
Chromium	ND		0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 17:35	1
Lead	ND		0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 17:35	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 240-566090/2-A
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566090

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 17:35	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 17:35	1

Lab Sample ID: LCS 240-566090/3-A
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	2.00	1.95		mg/L		97	50 - 150
Cadmium	1.00	0.991		mg/L		99	50 - 150
Chromium	1.00	0.930		mg/L		93	50 - 150
Lead	1.00	0.918		mg/L		92	50 - 150
Selenium	2.00	2.04		mg/L		102	50 - 150
Silver	0.100	0.0991		mg/L		99	50 - 150

Lab Sample ID: LB 240-565954/1-B
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566090

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.00437	J	0.050	0.0041	mg/L		03/20/23 14:00	03/21/23 17:31	1
Barium	ND		0.50	0.0013	mg/L		03/20/23 14:00	03/21/23 17:31	1
Cadmium	ND		0.050	0.00020	mg/L		03/20/23 14:00	03/21/23 17:31	1
Chromium	ND		0.050	0.0040	mg/L		03/20/23 14:00	03/21/23 17:31	1
Lead	ND		0.050	0.0028	mg/L		03/20/23 14:00	03/21/23 17:31	1
Selenium	ND		0.050	0.0060	mg/L		03/20/23 14:00	03/21/23 17:31	1
Silver	ND		0.050	0.00062	mg/L		03/20/23 14:00	03/21/23 17:31	1

Lab Sample ID: 240-182146-1 MS
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: WC-VB1402-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 566090

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.11	J	50.0	50.6			101	75 - 125	
Cadmium	ND		1.00	1.02			102	75 - 125	
Chromium	ND		5.00	5.04			101	75 - 125	
Lead	ND		5.00	5.00			100	75 - 125	
Selenium	ND		1.00	1.07			107	75 - 125	
Silver	ND		1.00	1.03			103	75 - 125	

Lab Sample ID: 240-182146-1 MSD
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: WC-VB1402-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 566090

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.11	J	50.0	49.3			98	75 - 125	3	20	
Cadmium	ND		1.00	1.01			101	75 - 125	1	20	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-182146-1 MSD
Matrix: Solid
Analysis Batch: 566223

Client Sample ID: WC-VB1402-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 566090

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Chromium	ND		5.00	4.97		mg/L		99	75 - 125	1	20	
Lead	ND		5.00	4.95		mg/L		99	75 - 125	1	20	
Selenium	ND		1.00	1.06		mg/L		106	75 - 125	1	20	
Silver	ND		1.00	1.01		mg/L		101	75 - 125	2	20	

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-566092/2-A
Matrix: Solid
Analysis Batch: 566198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566092

Analyte	MB		RL	MDL		Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier		Result	Qualifier					
Mercury	ND		0.0020	0.00013		mg/L		03/20/23 14:00	03/21/23 13:56	1

Lab Sample ID: LCS 240-566092/3-A
Matrix: Solid
Analysis Batch: 566198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566092

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	RPD
Mercury	0.00500	0.00500		mg/L		100	80 - 120	

Lab Sample ID: LB 240-565954/1-C
Matrix: Solid
Analysis Batch: 566198

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566092

Analyte	LB		RL	MDL		Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier		Result	Qualifier					
Mercury	ND		0.0020	0.00013		mg/L		03/20/23 14:00	03/21/23 13:54	1

Lab Sample ID: 240-182146-1 MS
Matrix: Solid
Analysis Batch: 566198

Client Sample ID: WC-VB1402-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 566092

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	RPD
Mercury	ND		0.00500	0.00531		mg/L		106	80 - 120	

Lab Sample ID: 240-182146-1 MSD
Matrix: Solid
Analysis Batch: 566198

Client Sample ID: WC-VB1402-PLASTIC PELLETS
Prep Type: TCLP
Prep Batch: 566092

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Mercury	ND		0.00500	0.00531		mg/L		106	80 - 120	0	20	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

GC/MS VOA

Composite Batch: 565939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	Composite	
240-182146-4 MS	WC-COMP-PLASTIC PELLETS	TCLP	Solid	Composite	
240-182146-4 MSD	WC-COMP-PLASTIC PELLETS	TCLP	Solid	Composite	

Leach Batch: 565958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	565939
LB 240-565958/1-A MB	Method Blank	TCLP	Solid	1311	
240-182146-4 MS	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	565939
240-182146-4 MSD	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	565939

Analysis Batch: 566055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8260D	565958
LB 240-565958/1-A MB	Method Blank	TCLP	Solid	8260D	565958
LCS 240-566055/11	Lab Control Sample	Total/NA	Solid	8260D	
240-182146-4 MS	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8260D	565958
240-182146-4 MSD	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8260D	565958

Prep Batch: 566125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	Total/NA	Solid	5035	
240-182146-2	WC-VB1344-PLASTIC PELLETS	Total/NA	Solid	5035	
240-182146-3	WC-VB1108-PLASTIC PELLETS	Total/NA	Solid	5035	
240-182146-6	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	5035	
MB 240-566125/1-A	Method Blank	Total/NA	Solid	5035	
MB 240-566125/3-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 566130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-2	WC-VB1344-PLASTIC PELLETS	Total/NA	Solid	8260D	566125
240-182146-3	WC-VB1108-PLASTIC PELLETS	Total/NA	Solid	8260D	566125
240-182146-6	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	8260D	566125
MB 240-566125/1-A	Method Blank	Total/NA	Solid	8260D	566125
LCS 240-566130/5	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 566249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	Total/NA	Solid	8260D	566125
MB 240-566125/3-A	Method Blank	Total/NA	Solid	8260D	566125
LCS 240-566249/3	Lab Control Sample	Total/NA	Solid	8260D	

GC/MS Semi VOA

Composite Batch: 565939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	Composite	

Leach Batch: 565954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	565939

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

GC/MS Semi VOA

Prep Batch: 566028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	Total/NA	Solid	3540C	
240-182146-2	WC-VB1344-PLASTIC PELLETS	Total/NA	Solid	3540C	
240-182146-3	WC-VB1108-PLASTIC PELLETS	Total/NA	Solid	3540C	
240-182146-6	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	3540C	
MB 240-566028/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-566028/2-A	Lab Control Sample	Total/NA	Solid	3540C	
240-182146-6 MS	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	3540C	
240-182146-6 MSD	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	3540C	

Prep Batch: 566085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	3510C	565954
MB 240-566085/12-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566085/13-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 566308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	Total/NA	Solid	8270E	566028
240-182146-2	WC-VB1344-PLASTIC PELLETS	Total/NA	Solid	8270E	566028
240-182146-3	WC-VB1108-PLASTIC PELLETS	Total/NA	Solid	8270E	566028
240-182146-6	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	8270E	566028
MB 240-566028/1-A	Method Blank	Total/NA	Solid	8270E	566028
LCS 240-566028/2-A	Lab Control Sample	Total/NA	Solid	8270E	566028
240-182146-6 MS	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	8270E	566028
240-182146-6 MSD	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	8270E	566028

Analysis Batch: 566310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-566085/12-A	Method Blank	Total/NA	Solid	8270E	566085
LCS 240-566085/13-A	Lab Control Sample	Total/NA	Solid	8270E	566085

Analysis Batch: 566469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8270E	566085

GC Semi VOA

Leach Batch: 355845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	

Prep Batch: 356471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8151A	355845
MB 410-356471/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-356471/2-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 410-356471/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	

Analysis Batch: 356491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8151A	356471

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

GC Semi VOA (Continued)

Analysis Batch: 356491 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-356471/1-A	Method Blank	Total/NA	Solid	8151A	356471
LCS 410-356471/2-A	Lab Control Sample	Total/NA	Solid	8151A	356471
LCSD 410-356471/3-A	Lab Control Sample Dup	Total/NA	Solid	8151A	356471

Composite Batch: 565939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	Composite	

Composite Batch: 565940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	Total/NA	Solid	Composite	

Leach Batch: 565954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	1311	565939

Prep Batch: 565996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	Total/NA	Solid	3546	565940
MB 240-565996/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-565996/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 566033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	Total/NA	Solid	8082A	565996
MB 240-565996/1-A	Method Blank	Total/NA	Solid	8082A	565996
LCS 240-565996/2-A	Lab Control Sample	Total/NA	Solid	8082A	565996

Prep Batch: 566087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	3510C	565954
MB 240-566087/10-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566087/11-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 566467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	TCLP	Solid	8081B	566087
MB 240-566087/10-A	Method Blank	Total/NA	Solid	8081B	566087
LCS 240-566087/11-A	Lab Control Sample	Total/NA	Solid	8081B	566087

Specialty Organics

Prep Batch: 357694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-5	WC-COMP1-N. DITCH	Total/NA	Solid	HRMS-Soxtherm	
MB 410-357694/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-357694/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 358197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-357694/1-A	Method Blank	Total/NA	Solid	8290A	357694

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Specialty Organics (Continued)

Analysis Batch: 358197 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-357694/2-A	Lab Control Sample	Total/NA	Solid	8290A	357694

Analysis Batch: 358612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-5	WC-COMP1-N. DITCH	Total/NA	Solid	8290A	357694

Metals

Leach Batch: 565954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	1311	
240-182146-2	WC-VB1344-PLASTIC PELLETS	TCLP	Solid	1311	
240-182146-3	WC-VB1108-PLASTIC PELLETS	TCLP	Solid	1311	
240-182146-6	WC-SB1597-SOIL & DEBRIS	TCLP	Solid	1311	
LB 240-565954/1-B	Method Blank	TCLP	Solid	1311	
LB 240-565954/1-C	Method Blank	TCLP	Solid	1311	
240-182146-1 MS	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	1311	
240-182146-1 MSD	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	1311	

Prep Batch: 566090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	3010A	565954
240-182146-2	WC-VB1344-PLASTIC PELLETS	TCLP	Solid	3010A	565954
240-182146-3	WC-VB1108-PLASTIC PELLETS	TCLP	Solid	3010A	565954
240-182146-6	WC-SB1597-SOIL & DEBRIS	TCLP	Solid	3010A	565954
LB 240-565954/1-B	Method Blank	TCLP	Solid	3010A	565954
MB 240-566090/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-566090/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-182146-1 MS	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	3010A	565954
240-182146-1 MSD	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	3010A	565954

Prep Batch: 566092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	565954
240-182146-2	WC-VB1344-PLASTIC PELLETS	TCLP	Solid	7470A	565954
240-182146-3	WC-VB1108-PLASTIC PELLETS	TCLP	Solid	7470A	565954
240-182146-6	WC-SB1597-SOIL & DEBRIS	TCLP	Solid	7470A	565954
LB 240-565954/1-C	Method Blank	TCLP	Solid	7470A	565954
MB 240-566092/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-566092/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-182146-1 MS	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	565954
240-182146-1 MSD	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	565954

Analysis Batch: 566198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	566092
240-182146-2	WC-VB1344-PLASTIC PELLETS	TCLP	Solid	7470A	566092
240-182146-3	WC-VB1108-PLASTIC PELLETS	TCLP	Solid	7470A	566092
240-182146-6	WC-SB1597-SOIL & DEBRIS	TCLP	Solid	7470A	566092
LB 240-565954/1-C	Method Blank	TCLP	Solid	7470A	566092
MB 240-566092/2-A	Method Blank	Total/NA	Solid	7470A	566092

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Metals (Continued)

Analysis Batch: 566198 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-566092/3-A	Lab Control Sample	Total/NA	Solid	7470A	566092
240-182146-1 MS	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	566092
240-182146-1 MSD	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	7470A	566092

Analysis Batch: 566223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	6010D	566090
240-182146-2	WC-VB1344-PLASTIC PELLETS	TCLP	Solid	6010D	566090
240-182146-3	WC-VB1108-PLASTIC PELLETS	TCLP	Solid	6010D	566090
240-182146-6	WC-SB1597-SOIL & DEBRIS	TCLP	Solid	6010D	566090
LB 240-565954/1-B	Method Blank	TCLP	Solid	6010D	566090
MB 240-566090/2-A	Method Blank	Total/NA	Solid	6010D	566090
LCS 240-566090/3-A	Lab Control Sample	Total/NA	Solid	6010D	566090
240-182146-1 MS	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	6010D	566090
240-182146-1 MSD	WC-VB1402-PLASTIC PELLETS	TCLP	Solid	6010D	566090

General Chemistry

Analysis Batch: 356146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-5	WC-COMP1-N. DITCH	Total/NA	Solid	Moisture	

Composite Batch: 565940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-4	WC-COMP-PLASTIC PELLETS	Total/NA	Solid	Composite	

Analysis Batch: 566074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182146-1	WC-VB1402-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-182146-2	WC-VB1344-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-182146-3	WC-VB1108-PLASTIC PELLETS	Total/NA	Solid	Moisture	
240-182146-4	WC-COMP-PLASTIC PELLETS	Total/NA	Solid	Moisture	565940
240-182146-6	WC-SB1597-SOIL & DEBRIS	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3010A			566090	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	6010D		1	566223	RKT	EET CAN	03/21/23 17:56
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	7470A			566092	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	7470A		1	566198	MRL	EET CAN	03/21/23 14:00
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50

Client Sample ID: WC-VB1402-PLASTIC PELLETS

Lab Sample ID: 240-182146-1

Date Collected: 03/17/23 14:45

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/17/23 20:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 19:51
Total/NA	Prep	3540C			566028	BMB	EET CAN	03/20/23 09:24
Total/NA	Analysis	8270E		1	566308	JMG	EET CAN	03/22/23 12:56

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3010A			566090	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	6010D		1	566223	RKT	EET CAN	03/21/23 18:18
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	7470A			566092	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	7470A		1	566198	MRL	EET CAN	03/21/23 14:12
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50

Client Sample ID: WC-VB1344-PLASTIC PELLETS

Lab Sample ID: 240-182146-2

Date Collected: 03/17/23 14:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 100.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/17/23 20:00
Total/NA	Analysis	8260D		1	566130	CS	EET CAN	03/20/23 23:34
Total/NA	Prep	3540C			566028	BMB	EET CAN	03/20/23 09:24
Total/NA	Analysis	8270E		1	566308	JMG	EET CAN	03/22/23 13:20

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3010A			566090	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	6010D		1	566223	RKT	EET CAN	03/21/23 18:22
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	7470A			566092	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	7470A		1	566198	MRL	EET CAN	03/21/23 14:15
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50

Client Sample ID: WC-VB1108-PLASTIC PELLETS

Lab Sample ID: 240-182146-3

Date Collected: 03/17/23 15:30

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/17/23 20:00
Total/NA	Analysis	8260D		1	566130	CS	EET CAN	03/20/23 23:59
Total/NA	Prep	3540C			566028	BMB	EET CAN	03/20/23 09:24
Total/NA	Analysis	8270E		1	566308	JMG	EET CAN	03/22/23 13:45

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

Date Collected: 03/17/23 00:00

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			565939	KLE	EET CAN	03/19/23 10:10
TCLP	Leach	1311			565958	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Analysis	8260D		1	566055	TJL1	EET CAN	03/20/23 14:32
TCLP	Composite	Composite			565939	KLE	EET CAN	03/19/23 10:10
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3510C			566085	SDE	EET CAN	03/20/23 12:32
TCLP	Analysis	8270E		1	566469	JMG	EET CAN	03/23/23 20:57
TCLP	Composite	Composite			565939	KLE	EET CAN	03/19/23 10:10
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3510C			566087	SDE	EET CAN	03/20/23 12:38
TCLP	Analysis	8081B		1	566467	BPM	EET CAN	03/23/23 12:56
TCLP	Leach	1311			355845	UNWS	ELLE	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	8151A			356471	UKL2	ELLE	03/22/23 21:04
TCLP	Analysis	8151A		1	356491	UAMZ	ELLE	03/23/23 11:26
Total/NA	Composite	Composite			565940	KLE	EET CAN	03/19/23 10:12
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Client Sample ID: WC-COMP-PLASTIC PELLETS

Lab Sample ID: 240-182146-4

Date Collected: 03/17/23 00:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 99.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			565940	KLE	EET CAN	03/19/23 10:12
Total/NA	Prep	3546			565996	AJ	EET CAN	03/20/23 08:55
Total/NA	Analysis	8082A		1	566033	RR	EET CAN	03/20/23 17:57

Client Sample ID: WC-COMP1-N. DITCH

Lab Sample ID: 240-182146-5

Date Collected: 03/17/23 14:00

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	HRMS-Soxtherm			357694	RGA5	ELLE	03/27/23 09:45
Total/NA	Analysis	8290A		1	358612	DZ6A	ELLE	03/29/23 12:16
Total/NA	Analysis	Moisture		1	356146	UVJN	ELLE	03/22/23 09:53

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	3010A			566090	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	6010D		1	566223	RKT	EET CAN	03/21/23 18:27
TCLP	Leach	1311			565954	KLE	EET CAN	03/19/23 16:40 - 03/20/23 08:55 ¹
TCLP	Prep	7470A			566092	AJC	EET CAN	03/20/23 14:00
TCLP	Analysis	7470A		1	566198	MRL	EET CAN	03/21/23 14:17
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50

Client Sample ID: WC-SB1597-SOIL & DEBRIS

Lab Sample ID: 240-182146-6

Date Collected: 03/17/23 15:00

Matrix: Solid

Date Received: 03/17/23 19:00

Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/17/23 20:00
Total/NA	Analysis	8260D		1	566130	CS	EET CAN	03/21/23 00:24
Total/NA	Prep	3540C			566028	BMB	EET CAN	03/20/23 09:24
Total/NA	Analysis	8270E		1	566308	JMG	EET CAN	03/22/23 19:02

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	03-27-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

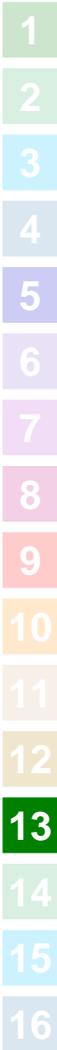
Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182146-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24



Chain of Custody Record

645688  eurofins

Environment Testing
America

Address: _____

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Project Manager: Jason Arcadis Date: 3-17-23
 Tell/Email: Jason arcadis@arcadis.com Carrier: _____

Client Contact
 Company Name: Arcadis
 Address: 111-D Sanders Lane
 City/State/Zip: Bluesfield VA 24605
 Phone: 304-396-9424
 Fax: _____

Site Contact:
 Site: East Palestine OH decontam
 PO #: 24030745
 Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below RUSH
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Total VOC	Total PCB	TCLP VOC	TCLP SVOC	TCLP Pst/Hxbs	Dioxins/Hxons	Sample Specific Notes:
1 WC-VB1402-Plastic Pellets	3/17/23	1445	G	W	9	N	X	X						
2 WC-VB1344-Plastic Pellets	3/17/23	1430	G	W	9	N	X	X						
3 WC-VB1108-Plastic Pellets	3/17/23	1530	G	W	9	N	X	X						
4 UNC-COMP-Plastic Pellets	3/17/23	-	C	W	-	N		X	X	X				Lab to composite
5 UNC-COMP1 - N Ditch	3/17/23	1400	C	W	1	N		X	X	X				
6 UNC-SB1597-Soil? Debris	3/17/23	1500	G	B	9	N	X	X	X	X				Total VOC, Total SVOC TCLP Metals only

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other
 Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months
 Sample Disposal (A fee may apply): 240-182146 Chain of Custody

Special Instructions/QC Requirements & Comments: Lab to generate 3 point composite sample of P. pellets (# 1, 2, 3)

Custody Seal No.: _____
 Relinquished by: Michelle Clayton
 Relinquished by: Arcadis
 Relinquished by: _____
 Received by: Jason Umrigar
 Received by: _____
 Received in Laboratory by: _____

Date/Time: 3-17-23 17:50
 Date/Time: _____
 Date/Time: _____



Eurofins - Canton Sample Receipt Form/Narrative Login # : 182146
Barberton Facility

Client NSRR-ER Site Name Arcadis Cooler unpacked by: me
Cooler Received on 3-17-23 Opened on 3-17-23
FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/Time **Storage Location**

Eurofins Cooler # EL Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2°C) Observed Cooler Temp. 5.3 °C Corrected Cooler Temp. 5.1 °C
IR GUN # IR-16 (CF -0.1°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by:

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-182146-1

Login Number: 182146

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 03/21/23 10:13 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182146-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-182146-5	WC-COMP1-N. DITCH	73	80	69	70	74	72	70	76
LCS 410-357694/2-A	Lab Control Sample	72	74	57	63	49	71	71	68
MB 410-357694/1-A	Method Blank	51	53	49	56	41	57	54	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-182146-5	WC-COMP1-N. DITCH	69	70	74	75	72	71	72	73
LCS 410-357694/2-A	Lab Control Sample	47	48	76	71	75	67	64	76
MB 410-357694/1-A	Method Blank	40	43	60	54	54	56	51	55

		HpCDD (40-135)
240-182146-5	WC-COMP1-N. DITCH	73
LCS 410-357694/2-A	Lab Control Sample	69
MB 410-357694/1-A	Method Blank	49

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/31/2023 7:30:10 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182202-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/31/2023 7:30:10 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	21
Surrogate Summary	88
QC Sample Results	92
QC Association Summary	122
Lab Chronicle	131
Certification Summary	143
Chain of Custody	145
Receipt Checklists	151
Isotope Dilution Summary	152

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*3	ISTD response or retention time outside acceptable limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182202-1

Comments

No additional comments.

Receipt

The samples were received on 3/18/2023 6:42 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.5° C, 3.7° C, 4.3° C and 4.3° C.

All soil samples collected in TerraCore kits were frozen within 48hours of collection.

GC/MS VOA

Method 5035: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15) and WC-SB2455-SOIL + DEBRIS (240-182202-16).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566249 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Method 8260D: Surrogate recovery for the following samples was outside control limits: WC-S. TRACK-DEEP-05 (4-6') (240-182202-5) and WC-SB1188-SOIL + DEBRIS (240-182202-13). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

Method 8260D: The MS/MSD for Prep Batch 240-566108 is not reported because the parent sample is reported as a low level soil sample.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566133 recovered above the upper control limit for: 1,1,2-Trichloro-1,2,2-trifluoroethane and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-566125 and analytical batch 240-566133 recovered outside control limits for the following analytes: 1,1,2-Trichloroethane, Toluene and Xylenes, Total. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Internal standard responses were outside of acceptance limits for the following sample: WC-S. TRACK-DEEP-02 (6-8') (240-182202-2). The sample shows evidence of matrix interference.

Method 8260D: Internal standard (ISTD) response for the following samples were outside control limits: WC-SB2655-SOIL + DEBRIS (240-182202-15) and WC-SB2455-SOIL + DEBRIS (240-182202-16). The samples were re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260D: A MS/MSD was prepared for batch 240-566108, but was analyzed in a different analytical batch: WC-S. TRACK-DEEP-04 (6-8') (240-182202-4).

Method 5035: These samples were taken off a shelf in the sample receiving refrigerator, if these plastic bags were opened in another part of the lab they could have been contaminated: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21), WC-SB1905-ABSORBENTS (240-182202-22), (240-182202-B-22 MS) and (240-182202-B-22 MSD).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-566725 was outside the method criteria for the

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1 (Continued)

Laboratory: Eurofins Canton (Continued)

following analytes: Methyl tert-butyl ether and Chloromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes are considered estimated.

Method 8260D: A MS/MSD was prepared for batch 240-566719, but it was analyzed in a different analytical batch: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19) and WC-SB2446-ABSORBENTS (240-182202-20).

Method 8260D: The following samples were diluted due to the nature of the sample matrix: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19) and WC-SB2446-ABSORBENTS (240-182202-20). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566934 recovered above the upper control limit for: Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The laboratory control sample (LCS) associated with samples WC-S. TRACK-DEEP-COMP (01-05) (240-182202-11), WC-S. TRACK-DEEP-COMP (06-10) (240-182202-12), WC-COMP-SOIL + DEBRIS (240-182202-17) and (240-182136-D-1-F) had an acid surrogate recovery above acceptance criteria. Because the associated samples were ND for all analytes no corrective action was necessary. The results have been flagged accordingly and reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-566576 recovered above the upper control limit for 2-Nitrophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), WC-SB2455-SOIL + DEBRIS (240-182202-16), WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22).

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22). Elevated reporting limits (RLs) are provided.

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), (240-182202-F-1-B MS) and (240-182202-F-1-C MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-S. TRACK-DEEP-COMP (01-05) (240-182202-11), WC-S. TRACK-DEEP-COMP (06-10) (240-182202-12) and WC-COMP-SOIL + DEBRIS (240-182202-17).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The continuing calibration verification (CCV) associated with batch 240-566447 recovered above the upper control limit for silver and chromium. The samples associated with this CCV were below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), WC-SB2455-SOIL + DEBRIS (240-182202-16), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
Part Size Red	Particle Size Reduction Preparation	None	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Solid	03/18/23 09:01	03/18/23 18:42
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Solid	03/18/23 09:10	03/18/23 18:42
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Solid	03/18/23 09:39	03/18/23 18:42
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Solid	03/18/23 09:40	03/18/23 18:42
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Solid	03/18/23 11:08	03/18/23 18:42
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Solid	03/18/23 11:15	03/18/23 18:42
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Solid	03/18/23 11:33	03/18/23 18:42
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Solid	03/18/23 11:40	03/18/23 18:42
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Solid	03/18/23 11:51	03/18/23 18:42
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Solid	03/18/23 12:00	03/18/23 18:42
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-13	WC-SB1188-SOIL + DEBRIS	Solid	03/18/23 13:35	03/18/23 18:42
240-182202-14	WC-AMU112-SOIL + DEBRIS	Solid	03/18/23 14:05	03/18/23 18:42
240-182202-15	WC-SB2655-SOIL + DEBRIS	Solid	03/18/23 14:35	03/18/23 18:42
240-182202-16	WC-SB2455-SOIL + DEBRIS	Solid	03/18/23 14:20	03/18/23 18:42
240-182202-17	WC-COMP-SOIL + DEBRIS	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-18	WC-SB2418-ABSORBENTS	Solid	03/18/23 14:45	03/18/23 18:42
240-182202-19	WC-SB1833-ABSORBENTS	Solid	03/18/23 15:00	03/18/23 18:42
240-182202-20	WC-SB2446-ABSORBENTS	Solid	03/18/23 15:10	03/18/23 18:42
240-182202-21	WC-SB1450-ABSORBENTS	Solid	03/18/23 15:25	03/18/23 18:42
240-182202-22	WC-SB1905-ABSORBENTS	Solid	03/18/23 15:35	03/18/23 18:42

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.32	J	0.72	0.094	mg/Kg	40	✳	8270E	Total/NA
Benzo[a]anthracene	0.18	J	0.72	0.16	mg/Kg	40	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.38	J	0.72	0.31	mg/Kg	40	✳	8270E	Total/NA
Chrysene	0.16	J	0.72	0.072	mg/Kg	40	✳	8270E	Total/NA
Fluoranthene	0.21	J	0.72	0.21	mg/Kg	40	✳	8270E	Total/NA
Naphthalene	0.26	J	0.72	0.12	mg/Kg	40	✳	8270E	Total/NA
Phenanthrene	0.51	J F1	0.72	0.11	mg/Kg	40	✳	8270E	Total/NA
Pyrene	0.22	J	0.72	0.10	mg/Kg	40	✳	8270E	Total/NA
Arsenic	0.037	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.13	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0034	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0070	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0070	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0027	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0022	J	0.0045	0.0016	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.11	J	0.18	0.023	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.066	J	0.18	0.040	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.12	J	0.18	0.077	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.072	J	0.18	0.018	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.12	J	0.18	0.053	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.094	J	0.18	0.087	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.076	J	0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.20		0.18	0.026	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.12	J	0.18	0.025	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.013	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.28	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0043	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.27	J	1.0	0.25	mg/Kg	1	✳	8260D	Total/NA
Benzo[a]anthracene	0.099	J	0.35	0.080	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.21	J	0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.089	J	0.35	0.035	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.15	J	0.35	0.10	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.17	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	0.18	J	0.35	0.052	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.14	J	0.35	0.050	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.13	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0032	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	8.2		3.2	1.6	mg/Kg	10	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8') (Continued)

Lab Sample ID: 240-182202-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.26	J	0.90	0.12	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	1.2		0.90	0.21	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]pyrene	1.4		0.90	0.56	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.8		0.90	0.39	mg/Kg	50	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.1		0.90	0.43	mg/Kg	50	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.81	J	0.90	0.42	mg/Kg	50	✳	8270E	Total/NA
Chrysene	1.3		0.90	0.090	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	1.8		0.90	0.27	mg/Kg	50	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.0		0.90	0.44	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	0.20	J	0.90	0.15	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	0.69	J	0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
Pyrene	1.9		0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.0	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00096	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0040	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Mercury	0.00013	J	0.0020	0.00013	mg/L	1		7470A	TCLP

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0065	J	0.022	0.0039	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.047	B	0.028	0.023	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.014		0.0055	0.0020	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.13		0.075	0.0098	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.017	J	0.075	0.012	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.073	J	0.075	0.017	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.070	J	0.075	0.047	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.096		0.075	0.032	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.061	J	0.075	0.035	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.063	J	0.075	0.035	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.096		0.075	0.0074	mg/Kg	4	✳	8270E	Total/NA
Dibenzofuran	0.068	J	0.25	0.065	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.13		0.075	0.022	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.064	J	0.075	0.037	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.073	J	0.075	0.012	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.16		0.075	0.011	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.13		0.075	0.011	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.016	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00088	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0060	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0052	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0013	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0091	J	0.021	0.0038	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.047		0.026	0.022	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.039		0.038	0.0050	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.013	J	0.038	0.0062	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6') (Continued)

Lab Sample ID: 240-182202-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	0.028	J	0.038	0.0087	mg/Kg	2	☼	8270E	Total/NA
Benzo[a]pyrene	0.024	J	0.038	0.024	mg/Kg	2	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.044		0.038	0.017	mg/Kg	2	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.024	J	0.038	0.018	mg/Kg	2	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.021	J	0.038	0.018	mg/Kg	2	☼	8270E	Total/NA
Chrysene	0.030	J	0.038	0.0038	mg/Kg	2	☼	8270E	Total/NA
Fluoranthene	0.060		0.038	0.011	mg/Kg	2	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.025	J	0.038	0.019	mg/Kg	2	☼	8270E	Total/NA
Naphthalene	0.025	J	0.038	0.0062	mg/Kg	2	☼	8270E	Total/NA
Phenanthrene	0.063		0.038	0.0057	mg/Kg	2	☼	8270E	Total/NA
Pyrene	0.057		0.038	0.0055	mg/Kg	2	☼	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00097	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0045	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0061	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.019	J	0.024	0.0042	mg/Kg	1	☼	8260D	Total/NA
Acetone	0.087		0.030	0.025	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.0072	J	0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.022		0.019	0.0044	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.020		0.019	0.012	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.032		0.019	0.0084	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.022		0.019	0.0092	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.014	J	0.019	0.0090	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.024		0.019	0.0019	mg/Kg	1	☼	8270E	Total/NA
Dibenz(a,h)anthracene	0.010	J	0.019	0.0090	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.022	J	0.065	0.017	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.040		0.019	0.0058	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.0058	J	0.019	0.0036	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.017	J	0.019	0.0095	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.024		0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.055		0.019	0.0029	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.043		0.019	0.0028	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0054	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0057	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0029	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.047	B	0.026	0.022	mg/Kg	1	☼	8260D	Total/NA
Arsenic	0.017	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.88	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4') (Continued)

Lab Sample ID: 240-182202-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0063	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0043	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0021	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0051	J	0.020	0.0036	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.028		0.025	0.021	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.0027	J	0.0050	0.0018	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.069		0.038	0.0049	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.010	J	0.038	0.0072	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.012	J	0.038	0.0061	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.035	J	0.038	0.0086	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.030	J	0.038	0.023	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.047		0.038	0.016	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.028	J	0.038	0.018	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.026	J	0.038	0.017	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.070		0.038	0.0037	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.018	J	0.038	0.017	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	0.060		0.038	0.011	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.0092	J	0.038	0.0069	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.028	J	0.038	0.018	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	0.040		0.038	0.0061	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	0.091		0.038	0.0056	mg/Kg	2	✳	8270E	Total/NA
Pyrene	0.062		0.038	0.0054	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.83	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0052	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0040	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0015	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.012	J	0.024	0.0043	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.069		0.030	0.026	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.0089		0.0061	0.0022	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	1	✳	8270E	Total/NA
Acenaphthene	0.0057	J	0.019	0.0036	mg/Kg	1	✳	8270E	Total/NA
Anthracene	0.0086	J	0.019	0.0031	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	0.032		0.019	0.0043	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	0.028		0.019	0.012	mg/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.044		0.019	0.0082	mg/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.024		0.019	0.0090	mg/Kg	1	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.018	J	0.019	0.0088	mg/Kg	1	✳	8270E	Total/NA
Chrysene	0.032		0.019	0.0019	mg/Kg	1	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.011	J	0.019	0.0088	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.024	J	0.063	0.016	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.054		0.019	0.0056	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.0061	J	0.019	0.0035	mg/Kg	1	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6') (Continued)

Lab Sample ID: 240-182202-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	0.021		0.019	0.0093	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.024		0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.067		0.019	0.0028	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.055		0.019	0.0027	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.014	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.99	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0088	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0041	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0029	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	27	B	6.2	0.066	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	10	B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	0.36	J B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	1.9	J B	6.2	0.040	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	1.3	J B	6.2	0.026	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	1.2	J B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	1.6	J B	6.2	0.040	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDD	0.58	J I B	6.2	0.012	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	0.72	J B	6.2	0.024	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	0.88	J B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.044	ng/Kg	1	☼	8290A	Total/NA
2,3,4,6,7,8-HxCDF	1.2	J B	6.2	0.039	ng/Kg	1	☼	8290A	Total/NA
2,3,4,7,8-PeCDF	1.6	J B	6.2	0.019	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDD	0.44	J B	1.2	0.0093	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDF	0.43	J I	1.2	0.022	ng/Kg	1	☼	8290A	Total/NA
OCDD	450	B	12	0.075	ng/Kg	1	☼	8290A	Total/NA
OCDF	22	B	12	0.034	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	12	B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
Total HxCDF	19	B	6.2	0.041	ng/Kg	1	☼	8290A	Total/NA
Total HpCDD	27	B	6.2	0.066	ng/Kg	1	☼	8290A	Total/NA
Total HpCDF	25	B	6.2	0.023	ng/Kg	1	☼	8290A	Total/NA
Total PeCDD	5.4	J I B	6.2	0.012	ng/Kg	1	☼	8290A	Total/NA
Total PeCDF	12	I B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
Total TCDD	3.5	I B	1.2	0.0093	ng/Kg	1	☼	8290A	Total/NA
Total TCDF	6.2	I	1.2	0.022	ng/Kg	1	☼	8290A	Total/NA

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	6.5	B	6.0	0.060	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	0.84	J I B	6.0	0.0084	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	0.15	J I B	6.0	0.0066	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	0.21	J B	6.0	0.010	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	0.13	J I B	6.0	0.011	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	0.18	J I B	6.0	0.0071	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	0.16	J B	6.0	0.010	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	0.12	J B	6.0	0.0068	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	0.26	J B	6.0	0.0067	ng/Kg	1	☼	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)
(Continued)

Lab Sample ID: 240-182202-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.18	J B	6.0	0.0096	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	0.18	J B	6.0	0.0053	ng/Kg	1	✳	8290A	Total/NA
OCDD	250	B	12	0.065	ng/Kg	1	✳	8290A	Total/NA
OCDF	1.7	J B	12	0.013	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	3.9	J I B	6.0	0.0068	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	1.4	J I B	6.0	0.011	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	6.5	B	6.0	0.060	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	0.97	J I B	6.0	0.0097	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	0.76	J I B	6.0	0.0044	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	1.6	J I B	6.0	0.0060	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	0.20	J I B	1.2	0.013	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	0.49	J I	1.2	0.0061	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0048		0.0042	0.0015	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.049	J	0.082	0.028	mg/Kg	1	✳	8270E	Total/NA
2-Methylnaphthalene	0.49		0.025	0.0032	mg/Kg	1	✳	8270E	Total/NA
Acenaphthene	0.035		0.025	0.0047	mg/Kg	1	✳	8270E	Total/NA
Acenaphthylene	0.035		0.025	0.0066	mg/Kg	1	✳	8270E	Total/NA
Anthracene	0.083		0.025	0.0040	mg/Kg	1	✳	8270E	Total/NA
Benzaldehyde	0.065	J	0.16	0.038	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	0.41		0.025	0.0056	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	0.50		0.025	0.015	mg/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.80		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.20		0.025	0.012	mg/Kg	1	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.28		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.14		0.12	0.084	mg/Kg	1	✳	8270E	Total/NA
Carbazole	0.063	J	0.082	0.031	mg/Kg	1	✳	8270E	Total/NA
Chrysene	0.62		0.025	0.0025	mg/Kg	1	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.066		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.19		0.082	0.021	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.90		0.025	0.0073	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.047		0.025	0.0045	mg/Kg	1	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.19		0.025	0.012	mg/Kg	1	✳	8270E	Total/NA
Naphthalene	0.28		0.025	0.0040	mg/Kg	1	✳	8270E	Total/NA
Phenanthrene	0.54		0.025	0.0037	mg/Kg	1	✳	8270E	Total/NA
Phenol	0.014	J	0.082	0.013	mg/Kg	1	✳	8270E	Total/NA
Pyrene	0.85		0.025	0.0035	mg/Kg	1	✳	8270E	Total/NA
Arsenic	0.016	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.43	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0031	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0042	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.020	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0018	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1'-Biphenyl	0.14		0.12	0.041	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.95		0.036	0.0047	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.39		0.036	0.0069	mg/Kg	2	✳	8270E	Total/NA
Acenaphthylene	0.26		0.036	0.0097	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.40		0.036	0.0058	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.90		0.036	0.0083	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.92		0.036	0.023	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.4		0.036	0.016	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.36		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.48		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Carbazole	0.21		0.12	0.046	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.85		0.036	0.0036	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.11		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.65		0.12	0.031	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	1.8		0.036	0.011	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.47		0.036	0.0066	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.32		0.036	0.018	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	1.2		0.036	0.0058	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	1.7		0.036	0.0054	mg/Kg	2	✳	8270E	Total/NA
Pyrene	1.9		0.036	0.0052	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.67	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.024	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.013		0.013	0.0024	mg/Kg	1	✳	8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	0.012	J	0.013	0.0025	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.072		0.017	0.014	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.0016	J	0.0033	0.00046	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.0012	J	0.0066	0.00081	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.00095	J **	0.0033	0.00051	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.0017	J **	0.0066	0.0011	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.17		0.035	0.0046	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.13		0.035	0.0067	mg/Kg	2	✳	8270E	Total/NA
Acenaphthylene	0.015	J	0.035	0.0093	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.28		0.035	0.0056	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.68		0.035	0.0079	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.64		0.035	0.022	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.93		0.035	0.015	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.26		0.035	0.017	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.39		0.035	0.016	mg/Kg	2	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.16		0.16	0.12	mg/Kg	2	✳	8270E	Total/NA
Butyl benzyl phthalate	0.089	J	0.16	0.051	mg/Kg	2	✳	8270E	Total/NA
Carbazole	0.25		0.12	0.044	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.85		0.035	0.0035	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.083		0.035	0.016	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.13		0.12	0.030	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	2.1		0.035	0.010	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.19		0.035	0.0064	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	0.25		0.035	0.017	mg/Kg	2	☼	8270E	Total/NA
Naphthalene	0.12		0.035	0.0056	mg/Kg	2	☼	8270E	Total/NA
Phenanthrene	1.5		0.035	0.0052	mg/Kg	2	☼	8270E	Total/NA
Pyrene	1.7		0.035	0.0050	mg/Kg	2	☼	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.62	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0010	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.0047	J *+	0.0083	0.0013	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.13		0.017	0.0023	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.010	J	0.017	0.0033	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.0065	J	0.017	0.0047	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.018		0.017	0.0028	mg/Kg	1	☼	8270E	Total/NA
Benzaldehyde	0.042	J	0.12	0.027	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.095		0.017	0.0040	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.096		0.017	0.011	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.15		0.017	0.0075	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.035		0.017	0.0082	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.048		0.017	0.0080	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.12		0.017	0.0017	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.062		0.058	0.015	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.21		0.017	0.0052	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.0097	J	0.017	0.0032	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.033		0.017	0.0085	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.071		0.017	0.0028	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.19		0.017	0.0026	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.19		0.017	0.0025	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.0071	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.69	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0042	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	180	B	7.9	0.12	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	62	B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	4.4	J B	7.9	0.057	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	4.2	J B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	2.8	J B	7.9	0.18	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	9.4	B	7.9	0.059	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	3.9	J B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDD	5.1	J B	7.9	0.039	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	1.4	J B	7.9	0.051	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	20	B	7.9	0.060	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.79	J B	7.9	0.16	ng/Kg	1	☼	8290A	Total/NA
2,3,4,6,7,8-HxCDF	5.2	J B	7.9	0.13	ng/Kg	1	☼	8290A	Total/NA
2,3,4,7,8-PeCDF	6.4	J B	7.9	0.040	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDD	1.2	J B	1.6	0.019	ng/Kg	1	☼	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	1.2	J	1.6	0.041	ng/Kg	1	✳	8290A	Total/NA
OCDD	1600	B	16	0.14	ng/Kg	1	✳	8290A	Total/NA
OCDF	80	B	16	0.087	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	130	B	7.9	0.059	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	91	B	7.9	0.14	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	180	B	7.9	0.12	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	130	B	7.9	0.16	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	42	I B	7.9	0.039	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	39	I B	7.9	0.046	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	11	I B	1.6	0.019	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	34	I	1.6	0.041	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0082	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.036	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00034	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0066	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.13	J	0.42	0.067	mg/Kg	1		8270E	Total/NA
Arsenic	0.0048	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.068	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Lead	0.0077	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0066	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.020	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Lead	0.0050	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	0.50	J	1.9	0.43	mg/Kg	5		8270E	Total/NA
Benzo[b]fluoranthene	1.0	J	1.9	0.81	mg/Kg	5		8270E	Total/NA
Butyl benzyl phthalate	3.4	J	8.8	2.8	mg/Kg	5		8270E	Total/NA
Fluoranthene	0.78	J	1.9	0.56	mg/Kg	5		8270E	Total/NA
Phenanthrene	0.96	J	1.9	0.28	mg/Kg	5		8270E	Total/NA
Pyrene	0.82	J	1.9	0.27	mg/Kg	5		8270E	Total/NA
Arsenic	0.0075	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.080	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00041	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0077	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.23	J	0.91	0.17	mg/Kg	4		8270E	Total/NA
Benzo[a]anthracene	0.34	J	0.91	0.21	mg/Kg	4		8270E	Total/NA
Bis(2-ethylhexyl) phthalate	4.1	J	4.2	3.1	mg/Kg	4		8270E	Total/NA
Chrysene	0.37	J	0.91	0.090	mg/Kg	4		8270E	Total/NA
Fluoranthene	1.2		0.91	0.27	mg/Kg	4		8270E	Total/NA
Fluorene	0.20	J	0.91	0.17	mg/Kg	4		8270E	Total/NA
Phenanthrene	0.90	J	0.91	0.14	mg/Kg	4		8270E	Total/NA
Pyrene	1.2		0.91	0.13	mg/Kg	4		8270E	Total/NA
Arsenic	0.0071	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.066	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00038	J	0.050	0.00020	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0049	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2,2-Tetrachloroethane	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0049	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2-Trichloroethane	ND	+	0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1-Dichloroethane	ND		0.0049	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1-Dichloroethene	ND		0.0049	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2,4-Trichlorobenzene	ND		0.0049	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dibromo-3-Chloropropane	ND		0.0098	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Ethylene Dibromide	ND		0.0049	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichlorobenzene	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloroethane	ND		0.0049	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloropropane	ND		0.0049	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,3-Dichlorobenzene	ND		0.0049	0.00080	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,4-Dichlorobenzene	ND		0.0049	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
2-Butanone (MEK)	ND		0.020	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
2-Hexanone	ND		0.020	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Acetone	ND		0.024	0.021	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Benzene	ND		0.0049	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Dichlorobromomethane	ND		0.0049	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Bromoform	ND		0.0049	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Bromomethane	ND		0.0049	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Carbon disulfide	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Carbon tetrachloride	ND		0.0049	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chlorobenzene	ND		0.0049	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloroethane	ND		0.0049	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloroform	ND		0.0049	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloromethane	ND		0.0049	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
cis-1,2-Dichloroethene	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
cis-1,3-Dichloropropene	ND		0.0049	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Cyclohexane	ND		0.0098	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chlorodibromomethane	ND		0.0049	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Dichlorodifluoromethane	ND		0.0049	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Ethylbenzene	ND		0.0049	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Isopropylbenzene	ND		0.0049	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methyl acetate	ND		0.024	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methyl tert-butyl ether	ND		0.0049	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methylcyclohexane	ND		0.0098	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methylene Chloride	ND		0.024	0.012	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Styrene	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Tetrachloroethene	ND		0.0049	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Toluene	ND	+	0.0049	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
trans-1,2-Dichloroethene	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
trans-1,3-Dichloropropene	ND		0.0049	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Trichloroethene	ND		0.0049	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Trichlorofluoromethane	ND		0.0049	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Vinyl chloride	ND		0.0049	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Xylenes, Total	ND	+	0.0098	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	82		56 - 125	03/19/23 13:00	03/21/23 10:48	1
Dibromofluoromethane (Surr)	84		41 - 138	03/19/23 13:00	03/21/23 10:48	1
4-Bromofluorobenzene (Surr)	77		41 - 143	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloroethane-d4 (Surr)	86		58 - 125	03/19/23 13:00	03/21/23 10:48	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.4	0.82	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
bis (2-chloroisopropyl) ether	ND	F1	4.8	0.48	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4,5-Trichlorophenol	ND		7.2	3.3	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4,6-Trichlorophenol	ND		7.2	3.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dichlorophenol	ND		7.2	2.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dimethylphenol	ND		7.2	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dinitrophenol	ND		16	6.8	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dinitrotoluene	ND		9.6	3.0	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,6-Dinitrotoluene	ND		9.6	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Chloronaphthalene	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Chlorophenol	ND	F1	2.4	0.48	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Methylnaphthalene	0.32	J	0.72	0.094	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Methylphenol	ND		9.6	1.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Nitroaniline	ND		9.6	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Nitrophenol	ND	F1	2.4	0.63	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
3,3'-Dichlorobenzidine	ND		4.8	2.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
3-Nitroaniline	ND		9.6	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4,6-Dinitro-2-methylphenol	ND		16	3.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Bromophenyl phenyl ether	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chloro-3-methylphenol	ND		7.2	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chloroaniline	ND		7.2	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chlorophenyl phenyl ether	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Nitroaniline	ND		9.6	2.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Nitrophenol	ND		16	4.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acenaphthene	ND		0.72	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acenaphthylene	ND		0.72	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acetophenone	ND	F1	4.8	0.53	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Anthracene	ND		0.72	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Atrazine	ND		9.6	1.7	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzaldehyde	ND	F1	4.8	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[a]anthracene	0.18	J	0.72	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[a]pyrene	ND		0.72	0.45	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[b]fluoranthene	0.38	J	0.72	0.31	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[g,h,i]perylene	ND		0.72	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[k]fluoranthene	ND		0.72	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-chloroethoxy)methane	ND	F1	4.8	0.58	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-chloroethyl)ether	ND	F1	4.8	0.58	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-ethylhexyl) phthalate	ND		3.4	2.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Butyl benzyl phthalate	ND		3.4	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Caprolactam	ND		16	3.6	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Carbazole	ND		2.4	0.91	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Chrysene	0.16	J	0.72	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Dibenz(a,h)anthracene	ND		0.72	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND	F1	2.4	0.63	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Diethyl phthalate	ND		3.4	1.5	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Dimethyl phthalate	ND	F1	3.4	0.67	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Di-n-butyl phthalate	ND		3.4	2.4	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Di-n-octyl phthalate	ND		3.4	1.3	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Fluoranthene	0.21	J	0.72	0.21	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Fluorene	ND		0.72	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorobenzene	ND		0.72	0.14	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorobutadiene	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorocyclopentadiene	ND		16	3.0	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachloroethane	ND	F1	2.4	0.43	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Indeno[1,2,3-cd]pyrene	ND		0.72	0.35	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Isophorone	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
N-Nitrosodi-n-propylamine	ND	F1	2.4	0.53	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
N-Nitrosodiphenylamine	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Naphthalene	0.26	J	0.72	0.12	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Nitrobenzene	ND	F1	4.8	0.63	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Pentachlorophenol	ND		7.2	2.8	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Phenanthrene	0.51	J F1	0.72	0.11	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Phenol	ND		2.4	0.39	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Pyrene	0.22	J	0.72	0.10	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
3 & 4 Methylphenol	ND		19	1.4	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		46 - 137	03/22/23 08:13	03/24/23 11:10	40
Phenol-d5 (Surr)	61		26 - 120	03/22/23 08:13	03/24/23 11:10	40
Nitrobenzene-d5 (Surr)	40		25 - 120	03/22/23 08:13	03/24/23 11:10	40
2-Fluorophenol (Surr)	45		20 - 120	03/22/23 08:13	03/24/23 11:10	40
2-Fluorobiphenyl (Surr)	61		34 - 120	03/22/23 08:13	03/24/23 11:10	40
2,4,6-Tribromophenol (Surr)	48		10 - 120	03/22/23 08:13	03/24/23 11:10	40

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.037	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:41	1
Barium	0.13	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:41	1
Cadmium	0.0034	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:41	1
Chromium	0.0070	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:41	1
Lead	0.0070	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:41	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:41	1
Silver	0.0027	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:41	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	16.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2,2-Tetrachloroethane	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0045	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2-Trichloroethane	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1-Dichloroethane	ND		0.0045	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1-Dichloroethene	ND		0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2,4-Trichlorobenzene	ND		0.0045	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dibromo-3-Chloropropane	ND		0.0090	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Ethylene Dibromide	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichlorobenzene	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloroethane	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloropropane	ND		0.0045	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,3-Dichlorobenzene	ND		0.0045	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,4-Dichlorobenzene	ND		0.0045	0.00079	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
2-Butanone (MEK)	ND		0.018	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
2-Hexanone	ND		0.018	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
4-Methyl-2-pentanone (MIBK)	ND		0.018	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Acetone	ND		0.022	0.019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Benzene	ND		0.0045	0.00063	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Dichlorobromomethane	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Bromoform	ND		0.0045	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Bromomethane	ND		0.0045	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Carbon disulfide	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Carbon tetrachloride	ND		0.0045	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chlorobenzene	ND		0.0045	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloroethane	ND		0.0045	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloroform	ND		0.0045	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloromethane	ND		0.0045	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
cis-1,2-Dichloroethene	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
cis-1,3-Dichloropropene	ND		0.0045	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Cyclohexane	ND		0.0090	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chlorodibromomethane	ND		0.0045	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Dichlorodifluoromethane	ND		0.0045	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Ethylbenzene	ND		0.0045	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Isopropylbenzene	ND		0.0045	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methyl acetate	ND		0.022	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methyl tert-butyl ether	ND		0.0045	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methylcyclohexane	ND		0.0090	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methylene Chloride	ND		0.022	0.011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Styrene	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Tetrachloroethene	ND		0.0045	0.00066	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Toluene	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
trans-1,2-Dichloroethene	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
trans-1,3-Dichloropropene	ND		0.0045	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Trichloroethene	ND		0.0045	0.00057	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Trichlorofluoromethane	ND		0.0045	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Vinyl chloride	0.0022	J	0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Xylenes, Total	ND		0.0090	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	73	*3	56 - 125	03/19/23 13:00	03/21/23 14:23	1
Toluene-d8 (Surr)	122		56 - 125	03/19/23 13:00	03/21/23 21:06	1
Dibromofluoromethane (Surr)	95	*3	41 - 138	03/19/23 13:00	03/21/23 14:23	1
Dibromofluoromethane (Surr)	106		41 - 138	03/19/23 13:00	03/21/23 21:06	1
4-Bromofluorobenzene (Surr)	77	*3	41 - 143	03/19/23 13:00	03/21/23 14:23	1
4-Bromofluorobenzene (Surr)	127		41 - 143	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloroethane-d4 (Surr)	122	*3	58 - 125	03/19/23 13:00	03/21/23 14:23	1
1,2-Dichloroethane-d4 (Surr)	117		58 - 125	03/19/23 13:00	03/21/23 21:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.59	0.20	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4,5-Trichlorophenol	ND		1.8	0.82	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4,6-Trichlorophenol	ND		1.8	0.76	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dichlorophenol	ND		1.8	0.52	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dimethylphenol	ND		1.8	0.47	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dinitrophenol	ND		3.9	1.7	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dinitrotoluene	ND		2.4	0.74	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,6-Dinitrotoluene	ND		2.4	0.66	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Chloronaphthalene	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Chlorophenol	ND		0.59	0.12	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Methylnaphthalene	0.11	J	0.18	0.023	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Methylphenol	ND		2.4	0.37	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Nitroaniline	ND		2.4	0.47	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Nitrophenol	ND		0.59	0.15	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
3,3'-Dichlorobenzidine	ND		1.2	0.51	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
3-Nitroaniline	ND		2.4	0.58	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4,6-Dinitro-2-methylphenol	ND		3.9	0.95	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Bromophenyl phenyl ether	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chloro-3-methylphenol	ND		1.8	0.53	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chloroaniline	ND		1.8	0.36	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chlorophenyl phenyl ether	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Nitroaniline	ND		2.4	0.71	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Nitrophenol	ND		3.9	1.1	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acenaphthene	ND		0.18	0.034	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acenaphthylene	ND		0.18	0.048	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acetophenone	ND		1.2	0.13	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Anthracene	ND		0.18	0.029	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Atrazine	ND		2.4	0.43	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzaldehyde	ND		1.2	0.27	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[a]anthracene	0.066	J	0.18	0.040	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[a]pyrene	ND		0.18	0.11	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[b]fluoranthene	0.12	J	0.18	0.077	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[g,h,i]perylene	ND		0.18	0.084	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[k]fluoranthene	ND		0.18	0.082	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-chloroethoxy)methane	ND		1.2	0.14	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-chloroethyl)ether	ND		1.2	0.14	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-ethylhexyl) phthalate	ND		0.83	0.61	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Butyl benzyl phthalate	ND		0.83	0.26	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		3.9	0.89	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Carbazole	ND		0.59	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Chrysene	0.072	J	0.18	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dibenz(a,h)anthracene	ND		0.18	0.082	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dibenzofuran	ND		0.59	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Diethyl phthalate	ND		0.83	0.37	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dimethyl phthalate	ND		0.83	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Di-n-butyl phthalate	ND		0.83	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Di-n-octyl phthalate	ND		0.83	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Fluoranthene	0.12	J	0.18	0.053	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Fluorene	ND		0.18	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorobenzene	ND		0.18	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorobutadiene	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorocyclopentadiene	ND		3.9	0.74	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachloroethane	ND		0.59	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Indeno[1,2,3-cd]pyrene	0.094	J	0.18	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Isophorone	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
N-Nitrosodi-n-propylamine	ND		0.59	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
N-Nitrosodiphenylamine	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Naphthalene	0.076	J	0.18	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Nitrobenzene	ND		1.2	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Pentachlorophenol	ND		1.8	0.69	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Phenanthrene	0.20		0.18	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Phenol	ND		0.59	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Pyrene	0.12	J	0.18	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
3 & 4 Methylphenol	ND		4.7	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137	03/22/23 08:13	03/24/23 13:04	10
Phenol-d5 (Surr)	53		26 - 120	03/22/23 08:13	03/24/23 13:04	10
Nitrobenzene-d5 (Surr)	39		25 - 120	03/22/23 08:13	03/24/23 13:04	10
2-Fluorophenol (Surr)	44		20 - 120	03/22/23 08:13	03/24/23 13:04	10
2-Fluorobiphenyl (Surr)	57		34 - 120	03/22/23 08:13	03/24/23 13:04	10
2,4,6-Tribromophenol (Surr)	55		10 - 120	03/22/23 08:13	03/24/23 13:04	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:45	1
Barium	0.28	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:45	1
Cadmium	0.0024	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:45	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:45	1
Lead	0.0043	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:45	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:45	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:36	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	17.0		0.1	0.1	%			03/21/23 11:05	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.26	0.081	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2,2-Tetrachloroethane	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.26	0.069	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2-Trichloroethane	ND		0.26	0.059	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1-Dichloroethane	ND		0.26	0.050	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1-Dichloroethene	ND		0.26	0.085	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2,4-Trichlorobenzene	ND		0.26	0.14	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dibromo-3-Chloropropane	ND		0.52	0.23	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Ethylene Dibromide	ND		0.26	0.082	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichlorobenzene	ND		0.26	0.12	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloroethane	ND		0.26	0.049	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloropropane	ND		0.26	0.038	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,3-Dichlorobenzene	ND		0.26	0.048	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,4-Dichlorobenzene	ND		0.26	0.057	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
2-Hexanone	ND		1.0	0.27	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Acetone	0.27	J	1.0	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Benzene	ND		0.26	0.043	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Dichlorobromomethane	ND		0.26	0.063	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Bromoform	ND		0.26	0.24	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Bromomethane	ND		0.26	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Carbon disulfide	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Carbon tetrachloride	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chlorobenzene	ND		0.26	0.036	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloroethane	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloroform	ND		0.26	0.056	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloromethane	ND		0.26	0.068	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
cis-1,2-Dichloroethene	ND		0.26	0.041	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
cis-1,3-Dichloropropene	ND		0.26	0.13	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Cyclohexane	ND		0.52	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chlorodibromomethane	ND		0.26	0.12	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Dichlorodifluoromethane	ND		0.26	0.055	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Ethylbenzene	ND		0.26	0.049	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Isopropylbenzene	ND		0.26	0.039	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methyl acetate	ND		1.3	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methyl tert-butyl ether	ND		0.26	0.038	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methylcyclohexane	ND		0.52	0.068	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methylene Chloride	ND		0.52	0.40	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Styrene	ND		0.26	0.054	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Tetrachloroethene	ND		0.26	0.10	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Toluene	ND		0.26	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
trans-1,2-Dichloroethene	ND		0.26	0.064	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
trans-1,3-Dichloropropene	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Trichloroethene	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Trichlorofluoromethane	ND		0.26	0.14	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Vinyl chloride	ND		0.26	0.13	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Xylenes, Total	ND		0.52	0.094	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	119		56 - 125	03/20/23 14:08	03/21/23 23:37	1
Dibromofluoromethane (Surr)	102		41 - 138	03/20/23 14:08	03/21/23 23:37	1
4-Bromofluorobenzene (Surr)	119		41 - 143	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloroethane-d4 (Surr)	118		58 - 125	03/20/23 14:08	03/21/23 23:37	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dimethylphenol	ND		3.5	0.93	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dinitrotoluene	ND		4.7	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Methylnaphthalene	ND		0.35	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Methylphenol	ND		4.7	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Nitroaniline	ND		4.7	0.93	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Nitrophenol	ND		1.2	0.30	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
3-Nitroaniline	ND		4.7	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Nitrophenol	ND		7.7	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acenaphthene	ND		0.35	0.067	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acenaphthylene	ND		0.35	0.094	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acetophenone	ND		2.3	0.26	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Anthracene	ND		0.35	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Atrazine	ND		4.7	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzaldehyde	ND		2.3	0.54	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[a]anthracene	0.099	J	0.35	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[a]pyrene	ND		0.35	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[b]fluoranthene	0.21	J	0.35	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[g,h,i]perylene	ND		0.35	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[k]fluoranthene	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Butyl benzyl phthalate	ND		1.6	0.51	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Caprolactam	ND		7.7	1.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Carbazole	ND		1.2	0.44	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Chrysene	0.089	J	0.35	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.2	0.30	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Diethyl phthalate	ND		1.6	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Di-n-octyl phthalate	ND		1.6	0.65	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Fluoranthene	0.15	J	0.35	0.10	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Fluorene	ND		0.35	0.064	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Hexachlorocyclopentadiene	ND		7.7	1.4	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Indeno[1,2,3-cd]pyrene	0.17	J	0.35	0.17	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Isophorone	ND		1.2	0.28	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Naphthalene	ND		0.35	0.056	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Phenanthrene	0.18	J	0.35	0.052	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Phenol	ND		1.2	0.19	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
Pyrene	0.14	J	0.35	0.050	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20
3 & 4 Methylphenol	ND		9.3	0.68	mg/Kg	✱	03/22/23 08:13	03/24/23 12:41	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	83		46 - 137	03/22/23 08:13	03/24/23 12:41	20
Phenol-d5 (Surr)	47		26 - 120	03/22/23 08:13	03/24/23 12:41	20
Nitrobenzene-d5 (Surr)	33		25 - 120	03/22/23 08:13	03/24/23 12:41	20
2-Fluorophenol (Surr)	38		20 - 120	03/22/23 08:13	03/24/23 12:41	20
2-Fluorobiphenyl (Surr)	50		34 - 120	03/22/23 08:13	03/24/23 12:41	20
2,4,6-Tribromophenol (Surr)	42		10 - 120	03/22/23 08:13	03/24/23 12:41	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:50	1
Barium	0.13	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:50	1
Cadmium	0.0032	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:50	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:50	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:50	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:50	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:50	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.2	0.99	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2,2-Tetrachloroethane	ND		3.2	1.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.2	0.85	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2-Trichloroethane	ND		3.2	0.73	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1-Dichloroethane	ND		3.2	0.61	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1-Dichloroethene	ND		3.2	1.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2,4-Trichlorobenzene	ND		3.2	1.7	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dibromo-3-Chloropropane	ND		6.4	2.8	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Ethylene Dibromide	ND		3.2	1.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichlorobenzene	ND		3.2	1.5	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloroethane	ND		3.2	0.60	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloropropane	ND		3.2	0.47	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,3-Dichlorobenzene	ND		3.2	0.59	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,4-Dichlorobenzene	ND		3.2	0.70	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
2-Butanone (MEK)	ND		13	2.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
2-Hexanone	ND		13	3.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
4-Methyl-2-pentanone (MIBK)	ND		13	3.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Acetone	ND		13	3.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Benzene	ND		3.2	0.53	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Dichlorobromomethane	ND		3.2	0.77	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Bromoform	ND		3.2	2.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Bromomethane	ND		3.2	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Carbon disulfide	ND		3.2	1.4	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Carbon tetrachloride	ND		3.2	1.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chlorobenzene	ND		3.2	0.45	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloroethane	ND		3.2	1.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloroform	ND		3.2	0.69	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloromethane	ND		3.2	0.84	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
cis-1,2-Dichloroethene	ND		3.2	0.51	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
cis-1,3-Dichloropropene	ND		3.2	1.6	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Cyclohexane	ND		6.4	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chlorodibromomethane	ND		3.2	1.5	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Dichlorodifluoromethane	ND		3.2	0.67	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Ethylbenzene	ND		3.2	0.60	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Isopropylbenzene	ND		3.2	0.48	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methyl acetate	ND		16	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methyl tert-butyl ether	ND		3.2	0.47	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methylcyclohexane	ND		6.4	0.84	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methylene Chloride	ND		6.4	4.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Styrene	ND		3.2	0.66	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Tetrachloroethene	ND		3.2	1.2	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Toluene	ND		3.2	3.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
trans-1,2-Dichloroethene	ND		3.2	0.79	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
trans-1,3-Dichloropropene	ND		3.2	1.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Trichloroethene	ND		3.2	1.8	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Trichlorofluoromethane	ND		3.2	1.7	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Vinyl chloride	8.2		3.2	1.6	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Xylenes, Total	ND		6.4	1.2	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	82		56 - 125	03/20/23 14:08	03/22/23 05:06	10
Dibromofluoromethane (Surr)	76		41 - 138	03/20/23 14:08	03/22/23 05:06	10
4-Bromofluorobenzene (Surr)	80		41 - 143	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloroethane-d4 (Surr)	83		58 - 125	03/20/23 14:08	03/22/23 05:06	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
bis (2-chloroisopropyl) ether	ND		6.0	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4,5-Trichlorophenol	ND		9.0	4.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4,6-Trichlorophenol	ND		9.0	3.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dichlorophenol	ND		9.0	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dimethylphenol	ND		9.0	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dinitrophenol	ND		20	8.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dinitrotoluene	ND		12	3.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Chloronaphthalene	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Chlorophenol	ND		3.0	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Methylnaphthalene	0.26	J	0.90	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Methylphenol	ND		12	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Nitroaniline	ND		12	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Nitrophenol	ND		3.0	0.78	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
3,3'-Dichlorobenzidine	ND		6.0	2.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
3-Nitroaniline	ND		12	3.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Bromophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chloro-3-methylphenol	ND		9.0	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chloroaniline	ND		9.0	1.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chlorophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Nitroaniline	ND		12	3.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Nitrophenol	ND		20	5.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acenaphthene	ND		0.90	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acenaphthylene	ND		0.90	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acetophenone	ND		6.0	0.66	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Anthracene	ND		0.90	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Atrazine	ND		12	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzaldehyde	ND		6.0	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[a]anthracene	1.2		0.90	0.21	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[a]pyrene	1.4		0.90	0.56	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[b]fluoranthene	1.8		0.90	0.39	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[g,h,i]perylene	1.1		0.90	0.43	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[k]fluoranthene	0.81	J	0.90	0.42	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-chloroethoxy)methane	ND		6.0	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-chloroethyl)ether	ND		6.0	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-ethylhexyl) phthalate	ND		4.2	3.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Caprolactam	ND		20	4.5	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Carbazole	ND		3.0	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Chrysene	1.3		0.90	0.090	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Dibenz(a,h)anthracene	ND		0.90	0.42	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		3.0	0.78	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Diethyl phthalate	ND		4.2	1.9	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Dimethyl phthalate	ND		4.2	0.84	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Di-n-butyl phthalate	ND		4.2	3.0	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Fluoranthene	1.8		0.90	0.27	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Fluorene	ND		0.90	0.17	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorobenzene	ND		0.90	0.17	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorobutadiene	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorocyclopentadiene	ND		20	3.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachloroethane	ND		3.0	0.54	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Indeno[1,2,3-cd]pyrene	1.0		0.90	0.44	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Isophorone	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
N-Nitrosodi-n-propylamine	ND		3.0	0.66	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
N-Nitrosodiphenylamine	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Naphthalene	0.20	J	0.90	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Nitrobenzene	ND		6.0	0.78	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Pentachlorophenol	ND		9.0	3.5	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Phenanthrene	0.69	J	0.90	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Phenol	ND		3.0	0.48	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Pyrene	1.9		0.90	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
3 & 4 Methylphenol	ND		24	1.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	03/22/23 08:13	03/24/23 12:19	50
Phenol-d5 (Surr)	69		26 - 120	03/22/23 08:13	03/24/23 12:19	50
Nitrobenzene-d5 (Surr)	51		25 - 120	03/22/23 08:13	03/24/23 12:19	50
2-Fluorophenol (Surr)	54		20 - 120	03/22/23 08:13	03/24/23 12:19	50
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 12:19	50
2,4,6-Tribromophenol (Surr)	61		10 - 120	03/22/23 08:13	03/24/23 12:19	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:55	1
Barium	1.0	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:55	1
Cadmium	0.00096	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:55	1
Chromium	0.0040	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:55	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:55	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:55	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:55	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.3		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	16.7		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2,2-Tetrachloroethane	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0055	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2-Trichloroethane	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1-Dichloroethane	ND		0.0055	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1-Dichloroethene	ND		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2,4-Trichlorobenzene	ND		0.0055	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Ethylene Dibromide	ND		0.0055	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichlorobenzene	ND		0.0055	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloroethane	ND		0.0055	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloropropane	ND		0.0055	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,3-Dichlorobenzene	ND		0.0055	0.00091	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,4-Dichlorobenzene	ND		0.0055	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
2-Butanone (MEK)	0.0065	J	0.022	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
2-Hexanone	ND		0.022	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
4-Methyl-2-pentanone (MIBK)	ND		0.022	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Acetone	0.047	B	0.028	0.023	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Benzene	ND		0.0055	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Dichlorobromomethane	ND		0.0055	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Bromoform	ND		0.0055	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Bromomethane	ND		0.0055	0.0046	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Carbon disulfide	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Carbon tetrachloride	ND		0.0055	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chlorobenzene	ND		0.0055	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloroethane	ND		0.0055	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloroform	ND		0.0055	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloromethane	ND		0.0055	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
cis-1,2-Dichloroethene	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
cis-1,3-Dichloropropene	ND		0.0055	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chlorodibromomethane	ND		0.0055	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Dichlorodifluoromethane	ND		0.0055	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Ethylbenzene	ND		0.0055	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Isopropylbenzene	ND		0.0055	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methyl acetate	ND		0.028	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methyl tert-butyl ether	ND		0.0055	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methylcyclohexane	ND		0.011	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methylene Chloride	ND		0.028	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Styrene	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Tetrachloroethene	ND		0.0055	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Toluene	ND		0.0055	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
trans-1,2-Dichloroethene	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
trans-1,3-Dichloropropene	ND		0.0055	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Trichloroethene	ND		0.0055	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Trichlorofluoromethane	ND		0.0055	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Vinyl chloride	0.014		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Xylenes, Total	ND		0.011	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	128	S1+	56 - 125	03/19/23 13:00	03/21/23 21:31	1
Dibromofluoromethane (Surr)	108		41 - 138	03/19/23 13:00	03/21/23 21:31	1
4-Bromofluorobenzene (Surr)	138		41 - 143	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/19/23 13:00	03/21/23 21:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.25	0.085	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
bis (2-chloroisopropyl) ether	ND		0.50	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4,5-Trichlorophenol	ND		0.75	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4,6-Trichlorophenol	ND		0.75	0.32	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dichlorophenol	ND		0.75	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dimethylphenol	ND		0.75	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dinitrophenol	ND		1.6	0.71	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dinitrotoluene	ND		1.0	0.31	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,6-Dinitrotoluene	ND		1.0	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Chloronaphthalene	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Chlorophenol	ND		0.25	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Methylnaphthalene	0.13		0.075	0.0098	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Methylphenol	ND		1.0	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Nitroaniline	ND		1.0	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Nitrophenol	ND		0.25	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
3,3'-Dichlorobenzidine	ND		0.50	0.21	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
3-Nitroaniline	ND		1.0	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4,6-Dinitro-2-methylphenol	ND		1.6	0.40	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Bromophenyl phenyl ether	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chloro-3-methylphenol	ND		0.75	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chloroaniline	ND		0.75	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chlorophenyl phenyl ether	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Nitroaniline	ND		1.0	0.30	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Nitrophenol	ND		1.6	0.47	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acenaphthene	ND		0.075	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acenaphthylene	ND		0.075	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acetophenone	ND		0.50	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Anthracene	0.017	J	0.075	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Atrazine	ND		1.0	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzaldehyde	ND		0.50	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[a]anthracene	0.073	J	0.075	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[a]pyrene	0.070	J	0.075	0.047	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[b]fluoranthene	0.096		0.075	0.032	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[g,h,i]perylene	0.061	J	0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[k]fluoranthene	0.063	J	0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-chloroethoxy)methane	ND		0.50	0.060	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-chloroethyl)ether	ND		0.50	0.060	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-ethylhexyl) phthalate	ND		0.35	0.25	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Butyl benzyl phthalate	ND		0.35	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Caprolactam	ND		1.6	0.37	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Carbazole	ND		0.25	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Chrysene	0.096		0.075	0.0074	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Dibenz(a,h)anthracene	ND		0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.068	J	0.25	0.065	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Diethyl phthalate	ND		0.35	0.15	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Dimethyl phthalate	ND		0.35	0.070	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Di-n-butyl phthalate	ND		0.35	0.25	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Di-n-octyl phthalate	ND		0.35	0.14	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Fluoranthene	0.13		0.075	0.022	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Fluorene	ND		0.075	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorobenzene	ND		0.075	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorobutadiene	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorocyclopentadiene	ND		1.6	0.31	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachloroethane	ND		0.25	0.045	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Indeno[1,2,3-cd]pyrene	0.064	J	0.075	0.037	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Isophorone	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
N-Nitrosodi-n-propylamine	ND		0.25	0.055	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
N-Nitrosodiphenylamine	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Naphthalene	0.073	J	0.075	0.012	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Nitrobenzene	ND		0.50	0.065	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Pentachlorophenol	ND		0.75	0.29	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Phenanthrene	0.16		0.075	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Phenol	ND		0.25	0.040	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Pyrene	0.13		0.075	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
3 & 4 Methylphenol	ND		2.0	0.14	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	107		46 - 137	03/22/23 08:13	03/24/23 13:27	4
Phenol-d5 (Surr)	65		26 - 120	03/22/23 08:13	03/24/23 13:27	4
Nitrobenzene-d5 (Surr)	48		25 - 120	03/22/23 08:13	03/24/23 13:27	4
2-Fluorophenol (Surr)	54		20 - 120	03/22/23 08:13	03/24/23 13:27	4
2-Fluorobiphenyl (Surr)	77		34 - 120	03/22/23 08:13	03/24/23 13:27	4
2,4,6-Tribromophenol (Surr)	98		10 - 120	03/22/23 08:13	03/24/23 13:27	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.016	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:59	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:59	1
Cadmium	0.00088	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:59	1
Chromium	0.0060	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:59	1
Lead	0.0052	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:59	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:59	1
Silver	0.0013	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:59	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	20.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2,2-Tetrachloroethane	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0053	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2-Trichloroethane	ND	+	0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1-Dichloroethane	ND		0.0053	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1-Dichloroethene	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2,4-Trichlorobenzene	ND		0.0053	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Ethylene Dibromide	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichlorobenzene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloroethane	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloropropane	ND		0.0053	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,3-Dichlorobenzene	ND		0.0053	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,4-Dichlorobenzene	ND		0.0053	0.00093	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
2-Butanone (MEK)	0.0091	J	0.021	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
2-Hexanone	ND		0.021	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
4-Methyl-2-pentanone (MIBK)	ND		0.021	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Acetone	0.047		0.026	0.022	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Benzene	ND		0.0053	0.00074	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Dichlorobromomethane	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Bromoform	ND		0.0053	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Bromomethane	ND		0.0053	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Carbon disulfide	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Carbon tetrachloride	ND		0.0053	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chlorobenzene	ND		0.0053	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloroethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloroform	ND		0.0053	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloromethane	ND		0.0053	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
cis-1,2-Dichloroethene	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
cis-1,3-Dichloropropene	ND		0.0053	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chlorodibromomethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Dichlorodifluoromethane	ND		0.0053	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Ethylbenzene	ND		0.0053	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Isopropylbenzene	ND		0.0053	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methyl acetate	ND		0.026	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methyl tert-butyl ether	ND		0.0053	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methylcyclohexane	ND		0.011	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methylene Chloride	ND		0.026	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Styrene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Tetrachloroethene	ND		0.0053	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Toluene	ND	+	0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
trans-1,2-Dichloroethene	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
trans-1,3-Dichloropropene	ND		0.0053	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Trichloroethene	ND		0.0053	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Trichlorofluoromethane	ND		0.0053	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Vinyl chloride	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Xylenes, Total	ND	+	0.011	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	86		56 - 125	03/19/23 13:00	03/21/23 11:09	1
Dibromofluoromethane (Surr)	86		41 - 138	03/19/23 13:00	03/21/23 11:09	1
4-Bromofluorobenzene (Surr)	69		41 - 143	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/19/23 13:00	03/21/23 11:09	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.13	0.043	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
bis (2-chloroisopropyl) ether	ND		0.26	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4,5-Trichlorophenol	ND		0.38	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4,6-Trichlorophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dichlorophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dimethylphenol	ND		0.38	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dinitrophenol	ND		0.84	0.36	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dinitrotoluene	ND		0.51	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,6-Dinitrotoluene	ND		0.51	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Chloronaphthalene	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Chlorophenol	ND		0.13	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Methylnaphthalene	0.039		0.038	0.0050	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Methylphenol	ND		0.51	0.079	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Nitroaniline	ND		0.51	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Nitrophenol	ND		0.13	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
3,3'-Dichlorobenzidine	ND		0.26	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
3-Nitroaniline	ND		0.51	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4,6-Dinitro-2-methylphenol	ND		0.84	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Bromophenyl phenyl ether	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chloro-3-methylphenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chloroaniline	ND		0.38	0.077	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chlorophenyl phenyl ether	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Nitroaniline	ND		0.51	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Nitrophenol	ND		0.84	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acenaphthene	ND		0.038	0.0073	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acenaphthylene	ND		0.038	0.010	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acetophenone	ND		0.26	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Anthracene	0.013	J	0.038	0.0062	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Atrazine	ND		0.51	0.092	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzaldehyde	ND		0.26	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[a]anthracene	0.028	J	0.038	0.0087	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[a]pyrene	0.024	J	0.038	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[b]fluoranthene	0.044		0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[g,h,i]perylene	0.024	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[k]fluoranthene	0.021	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-chloroethoxy)methane	ND		0.26	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-chloroethyl)ether	ND		0.26	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-ethylhexyl) phthalate	ND		0.18	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Butyl benzyl phthalate	ND		0.18	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Caprolactam	ND		0.84	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Carbazole	ND		0.13	0.049	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Chrysene	0.030	J	0.038	0.0038	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Dibenz(a,h)anthracene	ND		0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.13	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Diethyl phthalate	ND		0.18	0.079	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Dimethyl phthalate	ND		0.18	0.036	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Di-n-butyl phthalate	ND		0.18	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Di-n-octyl phthalate	ND		0.18	0.072	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Fluoranthene	0.060		0.038	0.011	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Fluorene	ND		0.038	0.0070	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorobenzene	ND		0.038	0.0073	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorobutadiene	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorocyclopentadiene	ND		0.84	0.16	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachloroethane	ND		0.13	0.023	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Indeno[1,2,3-cd]pyrene	0.025	J	0.038	0.019	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Isophorone	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
N-Nitrosodi-n-propylamine	ND		0.13	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
N-Nitrosodiphenylamine	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Naphthalene	0.025	J	0.038	0.0062	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Nitrobenzene	ND		0.26	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Pentachlorophenol	ND		0.38	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Phenanthrene	0.063		0.038	0.0057	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Phenol	ND		0.13	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Pyrene	0.057		0.038	0.0055	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
3 & 4 Methylphenol	ND		1.0	0.074	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 14:13	2
Phenol-d5 (Surr)	59		26 - 120	03/22/23 08:13	03/24/23 14:13	2
Nitrobenzene-d5 (Surr)	46		25 - 120	03/22/23 08:13	03/24/23 14:13	2
2-Fluorophenol (Surr)	53		20 - 120	03/22/23 08:13	03/24/23 14:13	2
2-Fluorobiphenyl (Surr)	64		34 - 120	03/22/23 08:13	03/24/23 14:13	2
2,4,6-Tribromophenol (Surr)	79		10 - 120	03/22/23 08:13	03/24/23 14:13	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:04	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:04	1
Cadmium	0.00097	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:04	1
Chromium	0.0045	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:04	1
Lead	0.0061	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:04	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:04	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:04	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.9		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.1		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0060	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2,2-Tetrachloroethane	ND		0.0060	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0060	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2-Trichloroethane	ND	+	0.0060	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1-Dichloroethane	ND		0.0060	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1-Dichloroethene	ND		0.0060	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2,4-Trichlorobenzene	ND		0.0060	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dibromo-3-Chloropropane	ND		0.012	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Ethylene Dibromide	ND		0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichlorobenzene	ND		0.0060	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloroethane	ND		0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloropropane	ND		0.0060	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,3-Dichlorobenzene	ND		0.0060	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,4-Dichlorobenzene	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
2-Butanone (MEK)	0.019	J	0.024	0.0042	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
2-Hexanone	ND		0.024	0.0049	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
4-Methyl-2-pentanone (MIBK)	ND		0.024	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Acetone	0.087		0.030	0.025	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Benzene	ND		0.0060	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Dichlorobromomethane	ND		0.0060	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Bromoform	ND		0.0060	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Bromomethane	ND		0.0060	0.0049	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Carbon disulfide	ND		0.0060	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Carbon tetrachloride	ND		0.0060	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chlorobenzene	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloroethane	ND		0.0060	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloroform	ND		0.0060	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloromethane	ND		0.0060	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
cis-1,2-Dichloroethene	ND		0.0060	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
cis-1,3-Dichloropropene	ND		0.0060	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Cyclohexane	ND		0.012	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chlorodibromomethane	ND		0.0060	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Dichlorodifluoromethane	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Ethylbenzene	ND		0.0060	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Isopropylbenzene	ND		0.0060	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methyl acetate	ND		0.030	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methyl tert-butyl ether	ND		0.0060	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methylcyclohexane	ND		0.012	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methylene Chloride	ND		0.030	0.014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Styrene	ND		0.0060	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Tetrachloroethene	ND		0.0060	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Toluene	ND	+	0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
trans-1,2-Dichloroethene	ND		0.0060	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
trans-1,3-Dichloropropene	ND		0.0060	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Trichloroethene	ND		0.0060	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Trichlorofluoromethane	ND		0.0060	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Vinyl chloride	ND		0.0060	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Xylenes, Total	ND	+	0.012	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/19/23 13:00	03/21/23 11:30	1
Dibromofluoromethane (Surr)	83		41 - 138	03/19/23 13:00	03/21/23 11:30	1
4-Bromofluorobenzene (Surr)	73		41 - 143	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	03/19/23 13:00	03/21/23 11:30	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.065	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4,5-Trichlorophenol	ND		0.19	0.089	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4,6-Trichlorophenol	ND		0.19	0.083	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dichlorophenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dimethylphenol	ND		0.19	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dinitrophenol	ND		0.43	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dinitrotoluene	ND		0.26	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,6-Dinitrotoluene	ND		0.26	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Chloronaphthalene	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Chlorophenol	ND		0.065	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Methylphenol	ND		0.26	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Nitroaniline	ND		0.26	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Nitrophenol	ND		0.065	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
3,3'-Dichlorobenzidine	ND		0.13	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
3-Nitroaniline	ND		0.26	0.064	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4,6-Dinitro-2-methylphenol	ND		0.43	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Bromophenyl phenyl ether	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chloro-3-methylphenol	ND		0.19	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chloroaniline	ND		0.19	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chlorophenyl phenyl ether	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Nitroaniline	ND		0.26	0.078	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Nitrophenol	ND		0.43	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acenaphthene	ND		0.019	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acenaphthylene	ND		0.019	0.0052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Anthracene	0.0072	J	0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Atrazine	ND		0.26	0.047	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzaldehyde	ND		0.13	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[a]anthracene	0.022		0.019	0.0044	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[a]pyrene	0.020		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[b]fluoranthene	0.032		0.019	0.0084	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[g,h,i]perylene	0.022		0.019	0.0092	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[k]fluoranthene	0.014	J	0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-chloroethoxy)methane	ND		0.13	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-chloroethyl)ether	ND		0.13	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-ethylhexyl) phthalate	ND		0.091	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Butyl benzyl phthalate	ND		0.091	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Caprolactam	ND		0.43	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Carbazole	ND		0.065	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Chrysene	0.024		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Dibenz(a,h)anthracene	0.010	J	0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.022	J	0.065	0.017	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Diethyl phthalate	ND		0.091	0.040	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Dimethyl phthalate	ND		0.091	0.018	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Di-n-butyl phthalate	ND		0.091	0.066	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Di-n-octyl phthalate	ND		0.091	0.036	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Fluoranthene	0.040		0.019	0.0058	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Fluorene	0.0058	J	0.019	0.0036	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Hexachlorobenzene	ND		0.019	0.0037	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Hexachlorobutadiene	ND		0.065	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Hexachlorocyclopentadiene	ND		0.43	0.080	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Hexachloroethane	ND		0.065	0.012	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Indeno[1,2,3-cd]pyrene	0.017	J	0.019	0.0095	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Isophorone	ND		0.065	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
N-Nitrosodi-n-propylamine	ND		0.065	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
N-Nitrosodiphenylamine	ND		0.065	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Naphthalene	0.024		0.019	0.0031	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Nitrobenzene	ND		0.13	0.017	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Pentachlorophenol	ND		0.19	0.075	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Phenanthrene	0.055		0.019	0.0029	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Phenol	ND		0.065	0.010	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
Pyrene	0.043		0.019	0.0028	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1
3 & 4 Methylphenol	ND		0.52	0.038	mg/Kg	✳	03/22/23 08:13	03/24/23 16:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 16:07	1
Phenol-d5 (Surr)	50		26 - 120	03/22/23 08:13	03/24/23 16:07	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 16:07	1
2-Fluorophenol (Surr)	48		20 - 120	03/22/23 08:13	03/24/23 16:07	1
2-Fluorobiphenyl (Surr)	54		34 - 120	03/22/23 08:13	03/24/23 16:07	1
2,4,6-Tribromophenol (Surr)	87		10 - 120	03/22/23 08:13	03/24/23 16:07	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:08	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:08	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:08	1
Chromium	0.0054	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:08	1
Lead	0.0057	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:08	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:08	1
Silver	0.0029	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:08	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	24.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2,2-Tetrachloroethane	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0053	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2-Trichloroethane	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1-Dichloroethane	ND		0.0053	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1-Dichloroethene	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2,4-Trichlorobenzene	ND		0.0053	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Ethylene Dibromide	ND		0.0053	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichlorobenzene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloroethane	ND		0.0053	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloropropane	ND		0.0053	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,3-Dichlorobenzene	ND		0.0053	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,4-Dichlorobenzene	ND		0.0053	0.00093	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
2-Butanone (MEK)	ND		0.021	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
2-Hexanone	ND		0.021	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.021	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Acetone	0.047	B	0.026	0.022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Benzene	ND		0.0053	0.00074	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Dichlorobromomethane	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Bromoform	ND		0.0053	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Bromomethane	ND		0.0053	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Carbon disulfide	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Carbon tetrachloride	ND		0.0053	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chlorobenzene	ND		0.0053	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloroethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloroform	ND		0.0053	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloromethane	ND		0.0053	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
cis-1,2-Dichloroethene	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
cis-1,3-Dichloropropene	ND		0.0053	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chlorodibromomethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Dichlorodifluoromethane	ND		0.0053	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Ethylbenzene	ND		0.0053	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Isopropylbenzene	ND		0.0053	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methyl acetate	ND		0.026	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methyl tert-butyl ether	ND		0.0053	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methylcyclohexane	ND		0.011	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methylene Chloride	ND		0.026	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Styrene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Tetrachloroethene	ND		0.0053	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Toluene	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
trans-1,2-Dichloroethene	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
trans-1,3-Dichloropropene	ND		0.0053	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Trichloroethene	ND		0.0053	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Trichlorofluoromethane	ND		0.0053	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Vinyl chloride	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Xylenes, Total	ND		0.011	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	121		56 - 125	03/19/23 13:00	03/21/23 21:57	1
Dibromofluoromethane (Surr)	105		41 - 138	03/19/23 13:00	03/21/23 21:57	1
4-Bromofluorobenzene (Surr)	126		41 - 143	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/19/23 13:00	03/21/23 21:57	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.064	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4,5-Trichlorophenol	ND		0.19	0.089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4,6-Trichlorophenol	ND		0.19	0.082	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dichlorophenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dimethylphenol	ND		0.19	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dinitrophenol	ND		0.42	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dinitrotoluene	ND		0.26	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,6-Dinitrotoluene	ND		0.26	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Chloronaphthalene	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Chlorophenol	ND		0.064	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Methylnaphthalene	ND		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Methylphenol	ND		0.26	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Nitroaniline	ND		0.26	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Nitrophenol	ND		0.064	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
3,3'-Dichlorobenzidine	ND		0.13	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
3-Nitroaniline	ND		0.26	0.063	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4,6-Dinitro-2-methylphenol	ND		0.42	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Bromophenyl phenyl ether	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chloro-3-methylphenol	ND		0.19	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chloroaniline	ND		0.19	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chlorophenyl phenyl ether	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Nitroaniline	ND		0.26	0.077	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Nitrophenol	ND		0.42	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acenaphthene	ND		0.019	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acenaphthylene	ND		0.019	0.0052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Anthracene	ND		0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Atrazine	ND		0.26	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzaldehyde	ND		0.13	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[a]anthracene	ND		0.019	0.0044	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[a]pyrene	ND		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[b]fluoranthene	ND		0.019	0.0084	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[g,h,i]perylene	ND		0.019	0.0091	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[k]fluoranthene	ND		0.019	0.0089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-chloroethoxy)methane	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-chloroethyl)ether	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-ethylhexyl) phthalate	ND		0.090	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Butyl benzyl phthalate	ND		0.090	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Caprolactam	ND		0.42	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Carbazole	ND		0.064	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Chrysene	ND		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Dibenz(a,h)anthracene	ND		0.019	0.0089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.064	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Diethyl phthalate	ND		0.090	0.040	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Dimethyl phthalate	ND		0.090	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Di-n-butyl phthalate	ND		0.090	0.065	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Di-n-octyl phthalate	ND		0.090	0.036	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Fluoranthene	ND		0.019	0.0057	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Fluorene	ND		0.019	0.0035	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Hexachlorobenzene	ND		0.019	0.0037	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Hexachlorobutadiene	ND		0.064	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Hexachlorocyclopentadiene	ND		0.42	0.080	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Hexachloroethane	ND		0.064	0.012	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Indeno[1,2,3-cd]pyrene	ND		0.019	0.0095	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Isophorone	ND		0.064	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
N-Nitrosodi-n-propylamine	ND		0.064	0.014	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
N-Nitrosodiphenylamine	ND		0.064	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Naphthalene	ND		0.019	0.0031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Nitrobenzene	ND		0.13	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Pentachlorophenol	ND		0.19	0.075	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Phenanthrene	ND		0.019	0.0029	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Phenol	ND		0.064	0.010	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
Pyrene	ND		0.019	0.0028	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1
3 & 4 Methylphenol	ND		0.52	0.037	mg/Kg	✱	03/22/23 08:13	03/24/23 14:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	95		46 - 137	03/22/23 08:13	03/24/23 14:35	1
Phenol-d5 (Surr)	51		26 - 120	03/22/23 08:13	03/24/23 14:35	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 14:35	1
2-Fluorophenol (Surr)	49		20 - 120	03/22/23 08:13	03/24/23 14:35	1
2-Fluorobiphenyl (Surr)	48		34 - 120	03/22/23 08:13	03/24/23 14:35	1
2,4,6-Tribromophenol (Surr)	68		10 - 120	03/22/23 08:13	03/24/23 14:35	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:21	1
Barium	0.88	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:21	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:21	1
Chromium	0.0063	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:21	1
Lead	0.0043	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:21	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:21	1
Silver	0.0021	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:21	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2-Trichloroethane	ND	+	0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1-Dichloroethane	ND		0.0050	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Ethylene Dibromide	ND		0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloroethane	ND		0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloropropane	ND		0.0050	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,4-Dichlorobenzene	ND		0.0050	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
2-Butanone (MEK)	0.0051	J	0.020	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
2-Hexanone	ND		0.020	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Acetone	0.028		0.025	0.021	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Benzene	ND		0.0050	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Bromoform	ND		0.0050	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Bromomethane	ND		0.0050	0.0042	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloroethane	ND		0.0050	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloroform	ND		0.0050	0.00079	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloromethane	ND		0.0050	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Cyclohexane	ND		0.010	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Dichlorodifluoromethane	ND		0.0050	0.00095	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Ethylbenzene	ND		0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methyl acetate	ND		0.025	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methylene Chloride	ND		0.025	0.012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Styrene	ND		0.0050	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Toluene	ND	+	0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Trichloroethene	ND		0.0050	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Vinyl chloride	0.0027	J	0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Xylenes, Total	ND	+	0.010	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/19/23 13:00	03/21/23 12:13	1
Dibromofluoromethane (Surr)	89		41 - 138	03/19/23 13:00	03/21/23 12:13	1
4-Bromofluorobenzene (Surr)	73		41 - 143	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	03/19/23 13:00	03/21/23 12:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.13	0.043	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
bis (2-chloroisopropyl) ether	ND		0.25	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4,5-Trichlorophenol	ND		0.38	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4,6-Trichlorophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dichlorophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dimethylphenol	ND		0.38	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dinitrophenol	ND		0.83	0.36	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dinitrotoluene	ND		0.50	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,6-Dinitrotoluene	ND		0.50	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Chloronaphthalene	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Chlorophenol	ND		0.13	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Methylnaphthalene	0.069		0.038	0.0049	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Methylphenol	ND		0.50	0.078	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Nitroaniline	ND		0.50	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Nitrophenol	ND		0.13	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
3,3'-Dichlorobenzidine	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
3-Nitroaniline	ND		0.50	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4,6-Dinitro-2-methylphenol	ND		0.83	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Bromophenyl phenyl ether	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chloro-3-methylphenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chloroaniline	ND		0.38	0.075	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chlorophenyl phenyl ether	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Nitroaniline	ND		0.50	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Nitrophenol	ND		0.83	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acenaphthene	0.010	J	0.038	0.0072	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acenaphthylene	ND		0.038	0.010	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acetophenone	ND		0.25	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Anthracene	0.012	J	0.038	0.0061	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Atrazine	ND		0.50	0.090	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzaldehyde	ND		0.25	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[a]anthracene	0.035	J	0.038	0.0086	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[a]pyrene	0.030	J	0.038	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[b]fluoranthene	0.047		0.038	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[g,h,i]perylene	0.028	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[k]fluoranthene	0.026	J	0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-chloroethoxy)methane	ND		0.25	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-chloroethyl)ether	ND		0.25	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-ethylhexyl) phthalate	ND		0.18	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Butyl benzyl phthalate	ND		0.18	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Caprolactam	ND		0.83	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Carbazole	ND		0.13	0.048	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Chrysene	0.070		0.038	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Dibenz(a,h)anthracene	0.018	J	0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.13	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Diethyl phthalate	ND		0.18	0.078	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Dimethyl phthalate	ND		0.18	0.035	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Di-n-butyl phthalate	ND		0.18	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Di-n-octyl phthalate	ND		0.18	0.070	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Fluoranthene	0.060		0.038	0.011	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Fluorene	0.0092	J	0.038	0.0069	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Hexachlorobenzene	ND		0.038	0.0072	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Hexachlorobutadiene	ND		0.13	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Hexachlorocyclopentadiene	ND		0.83	0.16	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Hexachloroethane	ND		0.13	0.023	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Indeno[1,2,3-cd]pyrene	0.028	J	0.038	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Isophorone	ND		0.13	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
N-Nitrosodi-n-propylamine	ND		0.13	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
N-Nitrosodiphenylamine	ND		0.13	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Naphthalene	0.040		0.038	0.0061	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Nitrobenzene	ND		0.25	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Pentachlorophenol	ND		0.38	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Phenanthrene	0.091		0.038	0.0056	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Phenol	ND		0.13	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
Pyrene	0.062		0.038	0.0054	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2
3 & 4 Methylphenol	ND		1.0	0.073	mg/Kg	✱	03/22/23 08:13	03/24/23 13:50	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/22/23 08:13	03/24/23 13:50	2
Phenol-d5 (Surr)	78		26 - 120	03/22/23 08:13	03/24/23 13:50	2
Nitrobenzene-d5 (Surr)	66		25 - 120	03/22/23 08:13	03/24/23 13:50	2
2-Fluorophenol (Surr)	77		20 - 120	03/22/23 08:13	03/24/23 13:50	2
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 13:50	2
2,4,6-Tribromophenol (Surr)	96		10 - 120	03/22/23 08:13	03/24/23 13:50	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:25	1
Barium	0.83	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:25	1
Cadmium	0.0011	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:25	1
Chromium	0.0052	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:25	1
Lead	0.0040	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:25	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:25	1
Silver	0.0015	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.6		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.4		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2,2-Tetrachloroethane	ND		0.0061	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0061	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2-Trichloroethane	ND	+	0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1-Dichloroethane	ND		0.0061	0.00084	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1-Dichloroethene	ND		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2,4-Trichlorobenzene	ND		0.0061	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dibromo-3-Chloropropane	ND		0.012	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Ethylene Dibromide	ND		0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichlorobenzene	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloroethane	ND		0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloropropane	ND		0.0061	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,3-Dichlorobenzene	ND		0.0061	0.00099	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,4-Dichlorobenzene	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
2-Butanone (MEK)	0.012	J	0.024	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
2-Hexanone	ND		0.024	0.0050	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
4-Methyl-2-pentanone (MIBK)	ND		0.024	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Acetone	0.069		0.030	0.026	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Benzene	ND		0.0061	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Dichlorobromomethane	ND		0.0061	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Bromoform	ND		0.0061	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Bromomethane	ND		0.0061	0.0051	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Carbon disulfide	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Carbon tetrachloride	ND		0.0061	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chlorobenzene	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloroethane	ND		0.0061	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloroform	ND		0.0061	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloromethane	ND		0.0061	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
cis-1,2-Dichloroethene	ND		0.0061	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
cis-1,3-Dichloropropene	ND		0.0061	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Cyclohexane	ND		0.012	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chlorodibromomethane	ND		0.0061	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Dichlorodifluoromethane	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Ethylbenzene	ND		0.0061	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Isopropylbenzene	ND		0.0061	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methyl acetate	ND		0.030	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methyl tert-butyl ether	ND		0.0061	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methylcyclohexane	ND		0.012	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methylene Chloride	ND		0.030	0.015	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Styrene	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Tetrachloroethene	ND		0.0061	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Toluene	ND	+	0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
trans-1,2-Dichloroethene	ND		0.0061	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
trans-1,3-Dichloropropene	ND		0.0061	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Trichloroethene	ND		0.0061	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Trichlorofluoromethane	ND		0.0061	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Vinyl chloride	0.0089		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Xylenes, Total	ND	+	0.012	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	84		56 - 125	03/19/23 13:00	03/21/23 14:00	1
Dibromofluoromethane (Surr)	84		41 - 138	03/19/23 13:00	03/21/23 14:00	1
4-Bromofluorobenzene (Surr)	70		41 - 143	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	03/19/23 13:00	03/21/23 14:00	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.063	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4,5-Trichlorophenol	ND		0.19	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4,6-Trichlorophenol	ND		0.19	0.081	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dichlorophenol	ND		0.19	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dimethylphenol	ND		0.19	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dinitrophenol	ND		0.42	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dinitrotoluene	ND		0.25	0.079	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,6-Dinitrotoluene	ND		0.25	0.071	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Chloronaphthalene	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Chlorophenol	ND		0.063	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Methylphenol	ND		0.25	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Nitroaniline	ND		0.25	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Nitrophenol	ND		0.063	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
3,3'-Dichlorobenzidine	ND		0.13	0.054	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
3-Nitroaniline	ND		0.25	0.062	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4,6-Dinitro-2-methylphenol	ND		0.42	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Bromophenyl phenyl ether	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chloro-3-methylphenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chloroaniline	ND		0.19	0.038	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chlorophenyl phenyl ether	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Nitroaniline	ND		0.25	0.076	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Nitrophenol	ND		0.42	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acenaphthene	0.0057	J	0.019	0.0036	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acenaphthylene	ND		0.019	0.0051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Anthracene	0.0086	J	0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Atrazine	ND		0.25	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzaldehyde	ND		0.13	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[a]anthracene	0.032		0.019	0.0043	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[a]pyrene	0.028		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[b]fluoranthene	0.044		0.019	0.0082	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[g,h,i]perylene	0.024		0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[k]fluoranthene	0.018	J	0.019	0.0088	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-chloroethoxy)methane	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-chloroethyl)ether	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-ethylhexyl) phthalate	ND		0.089	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Butyl benzyl phthalate	ND		0.089	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Caprolactam	ND		0.42	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Carbazole	ND		0.063	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Chrysene	0.032		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Dibenz(a,h)anthracene	0.011	J	0.019	0.0088	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.024	J	0.063	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Diethyl phthalate	ND		0.089	0.039	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Dimethyl phthalate	ND		0.089	0.018	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Di-n-butyl phthalate	ND		0.089	0.064	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Di-n-octyl phthalate	ND		0.089	0.035	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Fluoranthene	0.054		0.019	0.0056	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Fluorene	0.0061	J	0.019	0.0035	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Hexachlorobenzene	ND		0.019	0.0036	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Hexachlorobutadiene	ND		0.063	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Hexachlorocyclopentadiene	ND		0.42	0.079	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Hexachloroethane	ND		0.063	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Indeno[1,2,3-cd]pyrene	0.021		0.019	0.0093	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Isophorone	ND		0.063	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
N-Nitrosodi-n-propylamine	ND		0.063	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
N-Nitrosodiphenylamine	ND		0.063	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Naphthalene	0.024		0.019	0.0031	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Nitrobenzene	ND		0.13	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Pentachlorophenol	ND		0.19	0.073	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Phenanthrene	0.067		0.019	0.0028	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Phenol	ND		0.063	0.010	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
Pyrene	0.055		0.019	0.0027	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1
3 & 4 Methylphenol	ND		0.51	0.037	mg/Kg	✳	03/22/23 08:13	03/24/23 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 16:30	1
Phenol-d5 (Surr)	52		26 - 120	03/22/23 08:13	03/24/23 16:30	1
Nitrobenzene-d5 (Surr)	41		25 - 120	03/22/23 08:13	03/24/23 16:30	1
2-Fluorophenol (Surr)	48		20 - 120	03/22/23 08:13	03/24/23 16:30	1
2-Fluorobiphenyl (Surr)	56		34 - 120	03/22/23 08:13	03/24/23 16:30	1
2,4,6-Tribromophenol (Surr)	90		10 - 120	03/22/23 08:13	03/24/23 16:30	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.014	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:30	1
Barium	0.99	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:30	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:30	1
Chromium	0.0088	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:30	1
Lead	0.0041	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:30	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:30	1
Silver	0.0029	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:30	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.4		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	20.6		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 16:16	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 16:16	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 16:16	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 16:16	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 16:16	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 16:16	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:16	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:16	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 16:16	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/22/23 16:16	1
Dibromofluoromethane (Surr)	98		71 - 121		03/22/23 16:16	1
4-Bromofluorobenzene (Surr)	108		80 - 120		03/22/23 16:16	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		03/22/23 16:16	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 15:15	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 15:15	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 15:15	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 15:15	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 15:15	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137	03/21/23 12:03	03/23/23 15:15	1
Phenol-d5 (Surr)	61		26 - 120	03/21/23 12:03	03/23/23 15:15	1
Nitrobenzene-d5 (Surr)	76		24 - 120	03/21/23 12:03	03/23/23 15:15	1
2-Fluorophenol (Surr)	70		19 - 120	03/21/23 12:03	03/23/23 15:15	1
2-Fluorobiphenyl (Surr)	91		33 - 120	03/21/23 12:03	03/23/23 15:15	1
2,4,6-Tribromophenol (Surr)	114		10 - 120	03/21/23 12:03	03/23/23 15:15	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:07	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:07	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:07	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:07	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:07	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:07	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:07	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	80		10 - 145	03/21/23 12:08	03/22/23 14:07	1
DCB Decachlorobiphenyl	79		10 - 145	03/21/23 12:08	03/22/23 14:07	1
Tetrachloro-m-xylene	63		10 - 123	03/21/23 12:08	03/22/23 14:07	1
Tetrachloro-m-xylene	67		10 - 123	03/21/23 12:08	03/22/23 14:07	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		65	32	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1221	ND		65	39	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1232	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1242	ND		65	25	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1248	ND		65	22	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1254	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1260	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1262	ND		65	29	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1268	ND		65	21	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:42	1
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:42	1
DCB Decachlorobiphenyl	82		10 - 174	03/21/23 08:36	03/21/23 16:42	1
DCB Decachlorobiphenyl	86		10 - 174	03/21/23 08:36	03/21/23 16:42	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 08:39	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 08:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	53		26 - 136	03/23/23 21:15	03/24/23 08:39	1
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	03/23/23 21:15	03/24/23 08:39	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	27	B	6.2	0.066	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,6,7,8-HpCDF	10	B	6.2	0.021	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8-HxCDD	0.36	J B	6.2	0.021	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8-HxCDF	1.9	J B	6.2	0.040	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8,9-HpCDF	1.3	J B	6.2	0.026	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,6,7,8-HxCDD	1.2	J B	6.2	0.020	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,6,7,8-HxCDF	1.6	J B	6.2	0.040	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8-PeCDD	0.58	J I B	6.2	0.012	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8-PeCDF	0.72	J B	6.2	0.024	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8,9-HxCDD	0.88	J B	6.2	0.020	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.044	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,4,6,7,8-HxCDF	1.2	J B	6.2	0.039	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,4,7,8-PeCDF	1.6	J B	6.2	0.019	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,7,8-TCDD	0.44	J B	1.2	0.0093	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,7,8-TCDF	0.43	J I	1.2	0.022	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
OCDD	450	B	12	0.075	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
OCDF	22	B	12	0.034	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	12	B	6.2	0.020	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HxCDF	19	B	6.2	0.041	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HpCDD	27	B	6.2	0.066	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HpCDF	25	B	6.2	0.023	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total PeCDD	5.4	J I B	6.2	0.012	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total PeCDF	12	I B	6.2	0.021	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total TCDD	3.5	I B	1.2	0.0093	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total TCDF	6.2	I	1.2	0.022	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	100		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-OCDD	104		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,7,8-TCDF	72		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,7,8-TCDD	77		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,4,7,8-PeCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,4,6,7,8-HxCDF	74		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8,9-HxCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8,9-HxCDD	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8-PeCDF	73		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8-PeCDD	72		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,6,7,8-HxCDF	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,6,7,8-HxCDD	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8,9-HpCDF	81		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8-HxCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8-HxCDD	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,6,7,8-HpCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,6,7,8-HpCDD	85		40 - 135				03/28/23 09:37	03/29/23 22:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.6		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	19.4		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 16:39	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 16:39	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 16:39	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 16:39	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 16:39	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 16:39	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:39	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:39	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 16:39	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 16:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	87		80 - 120					03/22/23 16:39	1
Dibromofluoromethane (Surr)	86		71 - 121					03/22/23 16:39	1
4-Bromofluorobenzene (Surr)	92		80 - 120					03/22/23 16:39	1
1,2-Dichloroethane-d4 (Surr)	92		76 - 120					03/22/23 16:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 15:38	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 15:38	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 15:38	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 15:38	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 15:38	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 15:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	115		46 - 137				03/21/23 12:03	03/23/23 15:38	1
Phenol-d5 (Surr)	52		26 - 120				03/21/23 12:03	03/23/23 15:38	1
Nitrobenzene-d5 (Surr)	66		24 - 120				03/21/23 12:03	03/23/23 15:38	1
2-Fluorophenol (Surr)	57		19 - 120				03/21/23 12:03	03/23/23 15:38	1
2-Fluorobiphenyl (Surr)	84		33 - 120				03/21/23 12:03	03/23/23 15:38	1
2,4,6-Tribromophenol (Surr)	112		10 - 120				03/21/23 12:03	03/23/23 15:38	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:39	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:39	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:39	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:39	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:39	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:39	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 145	03/21/23 12:08	03/22/23 14:39	1
DCB Decachlorobiphenyl	69		10 - 145	03/21/23 12:08	03/22/23 14:39	1
Tetrachloro-m-xylene	66		10 - 123	03/21/23 12:08	03/22/23 14:39	1
Tetrachloro-m-xylene	64		10 - 123	03/21/23 12:08	03/22/23 14:39	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		65	32	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1221	ND		65	39	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1232	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1242	ND		65	25	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1248	ND		65	22	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1254	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1260	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1262	ND		65	28	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1268	ND		65	21	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:59	1
DCB Decachlorobiphenyl	88		10 - 174	03/21/23 08:36	03/21/23 16:59	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 09:07	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 09:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	53		26 - 136	03/23/23 21:15	03/24/23 09:07	1
2,4-Dichlorophenylacetic acid (Surr)	59		26 - 136	03/23/23 21:15	03/24/23 09:07	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	6.5	B	6.0	0.060	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,6,7,8-HpCDF	0.84	J I B	6.0	0.0084	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8-HxCDD	0.15	J I B	6.0	0.0066	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8-HxCDF	0.21	J B	6.0	0.010	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8,9-HpCDF	0.13	J I B	6.0	0.011	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,6,7,8-HxCDD	0.18	J I B	6.0	0.0071	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,6,7,8-HxCDF	0.16	J B	6.0	0.010	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8-PeCDD	ND		6.0	0.0044	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8-PeCDF	0.12	J B	6.0	0.0068	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8,9-HxCDD	0.26	J B	6.0	0.0067	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8,9-HxCDF	ND		6.0	0.012	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,4,6,7,8-HxCDF	0.18	J B	6.0	0.0096	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,4,7,8-PeCDF	0.18	J B	6.0	0.0053	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,7,8-TCDD	ND		1.2	0.013	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,7,8-TCDF	ND		1.2	0.0061	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
OCDD	250	B	12	0.065	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
OCDF	1.7	J B	12	0.013	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
Total HxCDD	3.9	J I B	6.0	0.0068	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
Total HxCDF	1.4	J I B	6.0	0.011	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	6.5	B	6.0	0.060	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Total HpCDF	0.97	J I B	6.0	0.0097	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Total PeCDD	0.76	J I B	6.0	0.0044	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Total PeCDF	1.6	J I B	6.0	0.0060	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Total TCDD	0.20	J I B	1.2	0.013	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Total TCDF	0.49	J I	1.2	0.0061	ng/Kg	✳	03/28/23 09:37	03/29/23 23:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	91		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-OCDD	95		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,7,8-TCDF	66		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,7,8-TCDD	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,4,7,8-PeCDF	73		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,4,6,7,8-HxCDF	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8,9-HxCDF	69		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8,9-HxCDD	73		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8-PeCDF	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8-PeCDD	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,6,7,8-HxCDF	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,6,7,8-HxCDD	75		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8,9-HpCDF	75		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8-HxCDF	70		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8-HxCDD	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,6,7,8-HpCDF	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,6,7,8-HpCDD	78		40 - 135				03/28/23 09:37	03/29/23 23:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.7		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	20.3		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2,2-Tetrachloroethane	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0042	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2-Trichloroethane	ND		0.0042	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1-Dichloroethane	ND		0.0042	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1-Dichloroethene	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2,4-Trichlorobenzene	ND		0.0042	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dibromo-3-Chloropropane	ND		0.0085	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Ethylene Dibromide	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichlorobenzene	ND		0.0042	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloroethane	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloropropane	ND		0.0042	0.00072	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,3-Dichlorobenzene	ND		0.0042	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,4-Dichlorobenzene	ND		0.0042	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
2-Butanone (MEK)	ND		0.017	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
2-Hexanone	ND		0.017	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
4-Methyl-2-pentanone (MIBK)	ND		0.017	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Acetone	ND		0.021	0.018	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Benzene	ND		0.0042	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Dichlorobromomethane	ND		0.0042	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Bromoform	ND		0.0042	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Bromomethane	ND		0.0042	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Carbon disulfide	ND		0.0042	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Carbon tetrachloride	ND		0.0042	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chlorobenzene	ND		0.0042	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloroethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloroform	ND		0.0042	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloromethane	ND		0.0042	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
cis-1,2-Dichloroethene	ND		0.0042	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
cis-1,3-Dichloropropene	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Cyclohexane	ND		0.0085	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chlorodibromomethane	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Dichlorodifluoromethane	ND		0.0042	0.00080	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Ethylbenzene	ND		0.0042	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Isopropylbenzene	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methyl acetate	ND		0.021	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methyl tert-butyl ether	ND		0.0042	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methylcyclohexane	ND		0.0085	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methylene Chloride	ND		0.021	0.010	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Styrene	ND		0.0042	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Tetrachloroethene	ND		0.0042	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Toluene	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
trans-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
trans-1,3-Dichloropropene	ND		0.0042	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Trichloroethene	ND		0.0042	0.00054	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Trichlorofluoromethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Vinyl chloride	0.0048		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Xylenes, Total	ND		0.0085	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	122		56 - 125	03/19/23 13:00	03/21/23 22:22	1
Dibromofluoromethane (Surr)	112		41 - 138	03/19/23 13:00	03/21/23 22:22	1
4-Bromofluorobenzene (Surr)	127		41 - 143	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloroethane-d4 (Surr)	128	S1+	58 - 125	03/19/23 13:00	03/21/23 22:22	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.049	J	0.082	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
bis (2-chloroisopropyl) ether	ND		0.16	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4,5-Trichlorophenol	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4,6-Trichlorophenol	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dichlorophenol	ND		0.25	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dimethylphenol	ND		0.25	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dinitrophenol	ND		0.54	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dinitrotoluene	ND		0.33	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,6-Dinitrotoluene	ND		0.33	0.092	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Chloronaphthalene	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Chlorophenol	ND		0.082	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Methylnaphthalene	0.49		0.025	0.0032	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Methylphenol	ND		0.33	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Nitroaniline	ND		0.33	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Nitrophenol	ND		0.082	0.021	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
3,3'-Dichlorobenzidine	ND		0.16	0.071	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
3-Nitroaniline	ND		0.33	0.081	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4,6-Dinitro-2-methylphenol	ND		0.54	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Bromophenyl phenyl ether	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chloro-3-methylphenol	ND		0.25	0.074	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chloroaniline	ND		0.25	0.049	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chlorophenyl phenyl ether	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Nitroaniline	ND		0.33	0.099	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Nitrophenol	ND		0.54	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acenaphthene	0.035		0.025	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acenaphthylene	0.035		0.025	0.0066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acetophenone	ND		0.16	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Anthracene	0.083		0.025	0.0040	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Atrazine	ND		0.33	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzaldehyde	0.065	J	0.16	0.038	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[a]anthracene	0.41		0.025	0.0056	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[a]pyrene	0.50		0.025	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[b]fluoranthene	0.80		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[g,h,i]perylene	0.20		0.025	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[k]fluoranthene	0.28		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-chloroethoxy)methane	ND		0.16	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-chloroethyl)ether	ND		0.16	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-ethylhexyl) phthalate	0.14		0.12	0.084	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Butyl benzyl phthalate	ND		0.12	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Caprolactam	ND		0.54	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Carbazole	0.063	J	0.082	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Chrysene	0.62		0.025	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Dibenz(a,h)anthracene	0.066		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.19		0.082	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Diethyl phthalate	ND		0.12	0.051	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Dimethyl phthalate	ND		0.12	0.023	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Di-n-butyl phthalate	ND		0.12	0.083	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Di-n-octyl phthalate	ND		0.12	0.046	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Fluoranthene	0.90		0.025	0.0073	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Fluorene	0.047		0.025	0.0045	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorobenzene	ND		0.025	0.0047	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorobutadiene	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorocyclopentadiene	ND		0.54	0.10	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachloroethane	ND		0.082	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Indeno[1,2,3-cd]pyrene	0.19		0.025	0.012	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Isophorone	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
N-Nitrosodi-n-propylamine	ND		0.082	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
N-Nitrosodiphenylamine	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Naphthalene	0.28		0.025	0.0040	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Nitrobenzene	ND		0.16	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Pentachlorophenol	ND		0.25	0.096	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Phenanthrene	0.54		0.025	0.0037	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Phenol	0.014	J	0.082	0.013	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Pyrene	0.85		0.025	0.0035	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
3 & 4 Methylphenol	ND		0.66	0.048	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	03/22/23 08:13	03/24/23 18:24	1
Phenol-d5 (Surr)	62		26 - 120	03/22/23 08:13	03/24/23 18:24	1
Nitrobenzene-d5 (Surr)	40		25 - 120	03/22/23 08:13	03/24/23 18:24	1
2-Fluorophenol (Surr)	55		20 - 120	03/22/23 08:13	03/24/23 18:24	1
2-Fluorobiphenyl (Surr)	66		34 - 120	03/22/23 08:13	03/24/23 18:24	1
2,4,6-Tribromophenol (Surr)	102		10 - 120	03/22/23 08:13	03/24/23 18:24	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.016	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:35	1
Barium	0.43	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:35	1
Cadmium	0.0031	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:35	1
Chromium	0.0042	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:35	1
Lead	0.020	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:35	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:35	1
Silver	0.0018	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:35	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	60.5		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	39.5		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0047	0.0016	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,1,2,2-Tetrachloroethane	ND		0.0047	0.0013	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0047	0.0012	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,1,2-Trichloroethane	ND	+	0.0047	0.0011	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,1-Dichloroethane	ND		0.0047	0.00065	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,1-Dichloroethene	ND		0.0047	0.0017	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,2,4-Trichlorobenzene	ND		0.0047	0.0023	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,2-Dibromo-3-Chloropropane	ND		0.0093	0.0034	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Ethylene Dibromide	ND		0.0047	0.00072	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichlorobenzene	ND		0.0047	0.0010	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloroethane	ND		0.0047	0.00072	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloropropane	ND		0.0047	0.00079	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,3-Dichlorobenzene	ND		0.0047	0.00076	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
1,4-Dichlorobenzene	ND		0.0047	0.00082	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
2-Butanone (MEK)	ND		0.019	0.0033	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
2-Hexanone	ND		0.019	0.0038	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
4-Methyl-2-pentanone (MIBK)	ND		0.019	0.0035	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Acetone	ND		0.023	0.020	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Benzene	ND		0.0047	0.00065	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Dichlorobromomethane	ND		0.0047	0.0014	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Bromoform	ND		0.0047	0.0022	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Bromomethane	ND		0.0047	0.0039	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Carbon disulfide	ND		0.0047	0.0011	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Carbon tetrachloride	ND		0.0047	0.0030	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Chlorobenzene	ND		0.0047	0.00085	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Chloroethane	ND		0.0047	0.0026	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Chloroform	ND		0.0047	0.00073	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Chloromethane	ND		0.0047	0.0021	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
cis-1,2-Dichloroethene	ND		0.0047	0.0014	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
cis-1,3-Dichloropropene	ND		0.0047	0.0027	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Cyclohexane	ND		0.0093	0.0013	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Chlorodibromomethane	ND		0.0047	0.0026	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Dichlorodifluoromethane	ND		0.0047	0.00088	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Ethylbenzene	ND		0.0047	0.00098	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Isopropylbenzene	ND		0.0047	0.0018	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Methyl acetate	ND		0.023	0.0032	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Methyl tert-butyl ether	ND		0.0047	0.0018	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Methylcyclohexane	ND		0.0093	0.0011	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Methylene Chloride	ND		0.023	0.011	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Styrene	ND		0.0047	0.0011	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Tetrachloroethene	ND		0.0047	0.00068	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Toluene	ND	+	0.0047	0.00072	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
trans-1,2-Dichloroethene	ND		0.0047	0.0013	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
trans-1,3-Dichloropropene	ND		0.0047	0.0035	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Trichloroethene	ND		0.0047	0.00059	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Trichlorofluoromethane	ND		0.0047	0.0025	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Vinyl chloride	ND		0.0047	0.0016	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1
Xylenes, Total	ND	+	0.0093	0.0015	mg/Kg	✱	03/19/23 13:00	03/21/23 12:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	90		56 - 125	03/19/23 13:00	03/21/23 12:56	1
Dibromofluoromethane (Surr)	86		41 - 138	03/19/23 13:00	03/21/23 12:56	1
4-Bromofluorobenzene (Surr)	59		41 - 143	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloroethane-d4 (Surr)	98		58 - 125	03/19/23 13:00	03/21/23 12:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.14		0.12	0.041	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
bis (2-chloroisopropyl) ether	ND		0.24	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4,5-Trichlorophenol	ND		0.36	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4,6-Trichlorophenol	ND		0.36	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dichlorophenol	ND		0.36	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dimethylphenol	ND		0.36	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dinitrophenol	ND		0.80	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dinitrotoluene	ND		0.48	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,6-Dinitrotoluene	ND		0.48	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Chloronaphthalene	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Chlorophenol	ND		0.12	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Methylnaphthalene	0.95		0.036	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Methylphenol	ND		0.48	0.075	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Nitroaniline	ND		0.48	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Nitrophenol	ND		0.12	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
3,3'-Dichlorobenzidine	ND		0.24	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
3-Nitroaniline	ND		0.48	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4,6-Dinitro-2-methylphenol	ND		0.80	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Bromophenyl phenyl ether	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chloro-3-methylphenol	ND		0.36	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chloroaniline	ND		0.36	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chlorophenyl phenyl ether	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Nitroaniline	ND		0.48	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Nitrophenol	ND		0.80	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acenaphthene	0.39		0.036	0.0069	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acenaphthylene	0.26		0.036	0.0097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acetophenone	ND		0.24	0.027	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Anthracene	0.40		0.036	0.0058	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Atrazine	ND		0.48	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzaldehyde	ND		0.24	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[a]anthracene	0.90		0.036	0.0083	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[a]pyrene	0.92		0.036	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[b]fluoranthene	1.4		0.036	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[g,h,i]perylene	0.36		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[k]fluoranthene	0.48		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-chloroethoxy)methane	ND		0.24	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-chloroethyl)ether	ND		0.24	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-ethylhexyl) phthalate	ND		0.17	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Butyl benzyl phthalate	ND		0.17	0.053	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Caprolactam	ND		0.80	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Carbazole	0.21		0.12	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Chrysene	0.85		0.036	0.0036	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Dibenz(a,h)anthracene	0.11		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.65		0.12	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Diethyl phthalate	ND		0.17	0.075	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Dimethyl phthalate	ND		0.17	0.034	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Di-n-butyl phthalate	ND		0.17	0.12	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Di-n-octyl phthalate	ND		0.17	0.068	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Fluoranthene	1.8		0.036	0.011	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Fluorene	0.47		0.036	0.0066	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Hexachlorobenzene	ND		0.036	0.0069	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Hexachlorobutadiene	ND		0.12	0.029	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Hexachlorocyclopentadiene	ND		0.80	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Hexachloroethane	ND		0.12	0.022	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Indeno[1,2,3-cd]pyrene	0.32		0.036	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Isophorone	ND		0.12	0.029	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
N-Nitrosodi-n-propylamine	ND		0.12	0.027	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
N-Nitrosodiphenylamine	ND		0.12	0.029	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Naphthalene	1.2		0.036	0.0058	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Nitrobenzene	ND		0.24	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Pentachlorophenol	ND		0.36	0.14	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Phenanthrene	1.7		0.036	0.0054	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Phenol	ND		0.12	0.019	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
Pyrene	1.9		0.036	0.0052	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2
3 & 4 Methylphenol	ND		0.97	0.070	mg/Kg	✱	03/22/23 08:13	03/24/23 16:52	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		46 - 137	03/22/23 08:13	03/24/23 16:52	2
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 16:52	2
Nitrobenzene-d5 (Surr)	52		25 - 120	03/22/23 08:13	03/24/23 16:52	2
2-Fluorophenol (Surr)	65		20 - 120	03/22/23 08:13	03/24/23 16:52	2
2-Fluorobiphenyl (Surr)	61		34 - 120	03/22/23 08:13	03/24/23 16:52	2
2,4,6-Tribromophenol (Surr)	83		10 - 120	03/22/23 08:13	03/24/23 16:52	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:39	1
Barium	0.67	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:39	1
Cadmium	0.0022	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:39	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:39	1
Lead	0.024	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:39	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:39	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:39	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.7		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	17.3		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0033	0.0012	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,1,2,2-Tetrachloroethane	ND	*3	0.0033	0.00095	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0033	0.00085	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,1,2-Trichloroethane	ND	+	0.0033	0.00075	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,1-Dichloroethane	ND		0.0033	0.00046	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,1-Dichloroethene	ND		0.0033	0.0012	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,2,4-Trichlorobenzene	ND	*3	0.0033	0.0017	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.0066	0.0024	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Ethylene Dibromide	ND		0.0033	0.00051	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichlorobenzene	ND	*3	0.0033	0.00074	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloroethane	ND		0.0033	0.00051	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloropropane	ND		0.0033	0.00057	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,3-Dichlorobenzene	ND	*3	0.0033	0.00054	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
1,4-Dichlorobenzene	ND	*3	0.0033	0.00059	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
2-Butanone (MEK)	0.013		0.013	0.0024	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
2-Hexanone	ND		0.013	0.0027	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
4-Methyl-2-pentanone (MIBK)	0.012	J	0.013	0.0025	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Acetone	0.072		0.017	0.014	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Benzene	0.0016	J	0.0033	0.00046	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Dichlorobromomethane	ND		0.0033	0.0010	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Bromoform	ND		0.0033	0.0016	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Bromomethane	ND		0.0033	0.0028	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Carbon disulfide	ND		0.0033	0.00077	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Carbon tetrachloride	ND		0.0033	0.0022	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Chlorobenzene	ND		0.0033	0.00061	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Chloroethane	ND		0.0033	0.0018	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Chloroform	ND		0.0033	0.00052	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Chloromethane	ND		0.0033	0.0015	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
cis-1,2-Dichloroethene	ND		0.0033	0.00098	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
cis-1,3-Dichloropropene	ND		0.0033	0.0019	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Cyclohexane	ND		0.0066	0.00091	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Chlorodibromomethane	ND		0.0033	0.0018	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Dichlorodifluoromethane	ND		0.0033	0.00063	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Ethylbenzene	ND		0.0033	0.00070	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Isopropylbenzene	ND		0.0033	0.0013	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Methyl acetate	ND		0.017	0.0023	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Methyl tert-butyl ether	ND		0.0033	0.0013	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Methylcyclohexane	0.0012	J	0.0066	0.00081	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Methylene Chloride	ND		0.017	0.0080	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Styrene	ND		0.0033	0.00077	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Tetrachloroethene	ND		0.0033	0.00048	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Toluene	0.00095	J**	0.0033	0.00051	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
trans-1,2-Dichloroethene	ND		0.0033	0.00094	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
trans-1,3-Dichloropropene	ND		0.0033	0.0025	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Trichloroethene	ND		0.0033	0.00042	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Trichlorofluoromethane	ND		0.0033	0.0018	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Vinyl chloride	ND		0.0033	0.0012	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1
Xylenes, Total	0.0017	J**	0.0066	0.0011	mg/Kg	✱	03/19/23 13:00	03/21/23 13:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	03/19/23 13:00	03/21/23 13:17	1
Dibromofluoromethane (Surr)	83		41 - 138	03/19/23 13:00	03/21/23 13:17	1
4-Bromofluorobenzene (Surr)	53		41 - 143	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125	03/19/23 13:00	03/21/23 13:17	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.12	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
bis (2-chloroisopropyl) ether	ND		0.23	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4,5-Trichlorophenol	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4,6-Trichlorophenol	ND		0.35	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dichlorophenol	ND		0.35	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dimethylphenol	ND		0.35	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dinitrophenol	ND		0.77	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dinitrotoluene	ND		0.47	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,6-Dinitrotoluene	ND		0.47	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Chloronaphthalene	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Chlorophenol	ND		0.12	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Methylnaphthalene	0.17		0.035	0.0046	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Methylphenol	ND		0.47	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Nitroaniline	ND		0.47	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Nitrophenol	ND		0.12	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
3,3'-Dichlorobenzidine	ND		0.23	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
3-Nitroaniline	ND		0.47	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4,6-Dinitro-2-methylphenol	ND		0.77	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Bromophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chloro-3-methylphenol	ND		0.35	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chloroaniline	ND		0.35	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chlorophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Nitroaniline	ND		0.47	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Nitrophenol	ND		0.77	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acenaphthene	0.13		0.035	0.0067	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acenaphthylene	0.015	J	0.035	0.0093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acetophenone	ND		0.23	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Anthracene	0.28		0.035	0.0056	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Atrazine	ND		0.47	0.084	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzaldehyde	ND		0.23	0.054	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[a]anthracene	0.68		0.035	0.0079	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[a]pyrene	0.64		0.035	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[b]fluoranthene	0.93		0.035	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[g,h,i]perylene	0.26		0.035	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[k]fluoranthene	0.39		0.035	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-chloroethoxy)methane	ND		0.23	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-chloroethyl)ether	ND		0.23	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-ethylhexyl) phthalate	0.16		0.16	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Butyl benzyl phthalate	0.089	J	0.16	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Caprolactam	ND		0.77	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Carbazole	0.25		0.12	0.044	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Chrysene	0.85		0.035	0.0035	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Dibenz(a,h)anthracene	0.083		0.035	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.13		0.12	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Diethyl phthalate	ND		0.16	0.072	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Dimethyl phthalate	ND		0.16	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Di-n-butyl phthalate	ND		0.16	0.12	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Di-n-octyl phthalate	ND		0.16	0.065	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Fluoranthene	2.1		0.035	0.010	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Fluorene	0.19		0.035	0.0064	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorobenzene	ND		0.035	0.0066	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorobutadiene	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorocyclopentadiene	ND		0.77	0.14	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachloroethane	ND		0.12	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Indeno[1,2,3-cd]pyrene	0.25		0.035	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Isophorone	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
N-Nitrosodi-n-propylamine	ND		0.12	0.026	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
N-Nitrosodiphenylamine	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Naphthalene	0.12		0.035	0.0056	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Nitrobenzene	ND		0.23	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Pentachlorophenol	ND		0.35	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Phenanthrene	1.5		0.035	0.0052	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Phenol	ND		0.12	0.019	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Pyrene	1.7		0.035	0.0050	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
3 & 4 Methylphenol	ND		0.93	0.067	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	82		46 - 137	03/22/23 08:13	03/24/23 17:15	2
Phenol-d5 (Surr)	68		26 - 120	03/22/23 08:13	03/24/23 17:15	2
Nitrobenzene-d5 (Surr)	54		25 - 120	03/22/23 08:13	03/24/23 17:15	2
2-Fluorophenol (Surr)	64		20 - 120	03/22/23 08:13	03/24/23 17:15	2
2-Fluorobiphenyl (Surr)	72		34 - 120	03/22/23 08:13	03/24/23 17:15	2
2,4,6-Tribromophenol (Surr)	86		10 - 120	03/22/23 08:13	03/24/23 17:15	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:44	1
Barium	0.62	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:44	1
Cadmium	0.0010	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:44	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:44	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:44	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:44	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:44	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.5		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	13.5		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2,2-Tetrachloroethane	ND	*3	0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0042	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2-Trichloroethane	ND	+	0.0042	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1-Dichloroethane	ND		0.0042	0.00058	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1-Dichloroethene	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2,4-Trichlorobenzene	ND	*3	0.0042	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.0083	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Ethylene Dibromide	ND		0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichlorobenzene	ND	*3	0.0042	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloroethane	ND		0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloropropane	ND		0.0042	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,3-Dichlorobenzene	ND	*3	0.0042	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,4-Dichlorobenzene	ND	*3	0.0042	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
2-Butanone (MEK)	ND		0.017	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
2-Hexanone	ND		0.017	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
4-Methyl-2-pentanone (MIBK)	ND		0.017	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Acetone	ND		0.021	0.017	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Benzene	ND		0.0042	0.00058	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Dichlorobromomethane	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Bromoform	ND		0.0042	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Bromomethane	ND		0.0042	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Carbon disulfide	ND		0.0042	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Carbon tetrachloride	ND		0.0042	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chlorobenzene	ND		0.0042	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloroethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloroform	ND		0.0042	0.00066	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloromethane	ND		0.0042	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
cis-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
cis-1,3-Dichloropropene	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Cyclohexane	ND		0.0083	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chlorodibromomethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Dichlorodifluoromethane	ND		0.0042	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Ethylbenzene	ND		0.0042	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Isopropylbenzene	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methyl acetate	ND		0.021	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methyl tert-butyl ether	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methylcyclohexane	ND		0.0083	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methylene Chloride	ND		0.021	0.010	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Styrene	ND		0.0042	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Tetrachloroethene	ND		0.0042	0.00061	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Toluene	ND	+	0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
trans-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
trans-1,3-Dichloropropene	ND		0.0042	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Trichloroethene	ND		0.0042	0.00053	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Trichlorofluoromethane	ND		0.0042	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Vinyl chloride	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Xylenes, Total	0.0047	J**	0.0083	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	03/19/23 13:00	03/21/23 13:38	1
Dibromofluoromethane (Surr)	95		41 - 138	03/19/23 13:00	03/21/23 13:38	1
4-Bromofluorobenzene (Surr)	54		41 - 143	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125	03/19/23 13:00	03/21/23 13:38	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.058	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
bis (2-chloroisopropyl) ether	ND		0.12	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4,5-Trichlorophenol	ND		0.17	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4,6-Trichlorophenol	ND		0.17	0.074	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dichlorophenol	ND		0.17	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dimethylphenol	ND		0.17	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dinitrophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dinitrotoluene	ND		0.23	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,6-Dinitrotoluene	ND		0.23	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Chloronaphthalene	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Chlorophenol	ND		0.058	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Methylnaphthalene	0.13		0.017	0.0023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Methylphenol	ND		0.23	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Nitroaniline	ND		0.23	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Nitrophenol	ND		0.058	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
3,3'-Dichlorobenzidine	ND		0.12	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
3-Nitroaniline	ND		0.23	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4,6-Dinitro-2-methylphenol	ND		0.38	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Bromophenyl phenyl ether	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chloro-3-methylphenol	ND		0.17	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chloroaniline	ND		0.17	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chlorophenyl phenyl ether	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Nitroaniline	ND		0.23	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Nitrophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acenaphthene	0.010	J	0.017	0.0033	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acenaphthylene	0.0065	J	0.017	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acetophenone	ND		0.12	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Anthracene	0.018		0.017	0.0028	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Atrazine	ND		0.23	0.042	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzaldehyde	0.042	J	0.12	0.027	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[a]anthracene	0.095		0.017	0.0040	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[a]pyrene	0.096		0.017	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[b]fluoranthene	0.15		0.017	0.0075	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[g,h,i]perylene	0.035		0.017	0.0082	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[k]fluoranthene	0.048		0.017	0.0080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-chloroethoxy)methane	ND		0.12	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-chloroethyl)ether	ND		0.12	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-ethylhexyl) phthalate	ND		0.081	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Butyl benzyl phthalate	ND		0.081	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Caprolactam	ND		0.38	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Carbazole	ND		0.058	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Chrysene	0.12		0.017	0.0017	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Dibenz(a,h)anthracene	ND		0.017	0.0080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.062		0.058	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Diethyl phthalate	ND		0.081	0.036	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Dimethyl phthalate	ND		0.081	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Di-n-butyl phthalate	ND		0.081	0.059	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Di-n-octyl phthalate	ND		0.081	0.032	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Fluoranthene	0.21		0.017	0.0052	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Fluorene	0.0097	J	0.017	0.0032	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorobenzene	ND		0.017	0.0033	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorobutadiene	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorocyclopentadiene	ND		0.38	0.072	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachloroethane	ND		0.058	0.010	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Indeno[1,2,3-cd]pyrene	0.033		0.017	0.0085	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Isophorone	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
N-Nitrosodi-n-propylamine	ND		0.058	0.013	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
N-Nitrosodiphenylamine	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Naphthalene	0.071		0.017	0.0028	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Nitrobenzene	ND		0.12	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Pentachlorophenol	ND		0.17	0.067	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Phenanthrene	0.19		0.017	0.0026	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Phenol	ND		0.058	0.0093	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Pyrene	0.19		0.017	0.0025	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
3 & 4 Methylphenol	ND		0.46	0.034	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		46 - 137	03/22/23 08:13	03/24/23 18:47	1
Phenol-d5 (Surr)	51		26 - 120	03/22/23 08:13	03/24/23 18:47	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 18:47	1
2-Fluorophenol (Surr)	47		20 - 120	03/22/23 08:13	03/24/23 18:47	1
2-Fluorobiphenyl (Surr)	57		34 - 120	03/22/23 08:13	03/24/23 18:47	1
2,4,6-Tribromophenol (Surr)	96		10 - 120	03/22/23 08:13	03/24/23 18:47	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:48	1
Barium	0.69	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:48	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:48	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:48	1
Lead	0.0042	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:48	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:48	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:48	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.3		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	14.7		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 17:02	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 17:02	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 17:02	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 17:02	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 17:02	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 17:02	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 17:02	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 17:02	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 17:02	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 17:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					03/22/23 17:02	1
Dibromofluoromethane (Surr)	96		71 - 121					03/22/23 17:02	1
4-Bromofluorobenzene (Surr)	108		80 - 120					03/22/23 17:02	1
1,2-Dichloroethane-d4 (Surr)	102		76 - 120					03/22/23 17:02	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 16:00	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 16:00	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 16:00	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 16:00	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 16:00	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137				03/21/23 12:03	03/23/23 16:00	1
Phenol-d5 (Surr)	62		26 - 120				03/21/23 12:03	03/23/23 16:00	1
Nitrobenzene-d5 (Surr)	80		24 - 120				03/21/23 12:03	03/23/23 16:00	1
2-Fluorophenol (Surr)	72		19 - 120				03/21/23 12:03	03/23/23 16:00	1
2-Fluorobiphenyl (Surr)	95		33 - 120				03/21/23 12:03	03/23/23 16:00	1
2,4,6-Tribromophenol (Surr)	110		10 - 120				03/21/23 12:03	03/23/23 16:00	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:54	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:54	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:54	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:54	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:54	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:54	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	74		10 - 145	03/21/23 12:08	03/22/23 14:54	1
DCB Decachlorobiphenyl	71		10 - 145	03/21/23 12:08	03/22/23 14:54	1
Tetrachloro-m-xylene	66		10 - 123	03/21/23 12:08	03/22/23 14:54	1
Tetrachloro-m-xylene	68		10 - 123	03/21/23 12:08	03/22/23 14:54	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		81	41	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1221	ND		81	49	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1232	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1242	ND		81	31	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1248	ND		81	28	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1254	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1260	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1262	ND		81	36	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1268	ND		81	26	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	86		10 - 149	03/21/23 08:36	03/21/23 17:15	1
DCB Decachlorobiphenyl	74		10 - 174	03/21/23 08:36	03/21/23 17:15	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 09:35	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 09:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	51		26 - 136	03/23/23 21:15	03/24/23 09:35	1
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	03/23/23 21:15	03/24/23 09:35	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	180	B	7.9	0.12	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,6,7,8-HpCDF	62	B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8-HxCDD	4.4	J B	7.9	0.057	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8-HxCDF	4.2	J B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8,9-HpCDF	2.8	J B	7.9	0.18	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,6,7,8-HxCDD	9.4	B	7.9	0.059	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,6,7,8-HxCDF	3.9	J B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8-PeCDD	5.1	J B	7.9	0.039	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8-PeCDF	1.4	J B	7.9	0.051	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8,9-HxCDD	20	B	7.9	0.060	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8,9-HxCDF	0.79	J B	7.9	0.16	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,4,6,7,8-HxCDF	5.2	J B	7.9	0.13	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,4,7,8-PeCDF	6.4	J B	7.9	0.040	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,7,8-TCDD	1.2	J B	1.6	0.019	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,7,8-TCDF	1.2	J	1.6	0.041	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
OCDD	1600	B	16	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
OCDF	80	B	16	0.087	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
Total HxCDD	130	B	7.9	0.059	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
Total HxCDF	91	B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	180	B	7.9	0.12	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total HpCDF	130	B	7.9	0.16	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total PeCDD	42	I B	7.9	0.039	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total PeCDF	39	I B	7.9	0.046	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total TCDD	11	I B	1.6	0.019	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total TCDF	34	I	1.6	0.041	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	66		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-OCDD	70		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-2,3,7,8-TCDF	48		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-2,3,7,8-TCDD	54		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-2,3,4,7,8-PeCDF	53		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-2,3,4,6,7,8-HxCDF	50		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8,9-HxCDF	49		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8,9-HxCDD	55		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8-PeCDF	53		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8-PeCDD	54		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,6,7,8-HxCDF	54		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,6,7,8-HxCDD	57		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8,9-HpCDF	54		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8-HxCDF	53		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8-HxCDD	55		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,6,7,8-HpCDF	52		40 - 135	03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,6,7,8-HpCDD	60		40 - 135	03/28/23 09:37	03/30/23 00:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	61.6		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	38.4		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.5	1.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2,2-Tetrachloroethane	ND		3.5	2.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.5	0.95	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2-Trichloroethane	ND		3.5	0.81	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1-Dichloroethane	ND		3.5	0.68	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1-Dichloroethene	ND		3.5	1.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2,4-Trichlorobenzene	ND		3.5	1.9	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dibromo-3-Chloropropane	ND		7.1	3.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Ethylene Dibromide	ND		3.5	1.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichlorobenzene	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloroethane	ND		3.5	0.67	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloropropane	ND		3.5	0.52	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,3-Dichlorobenzene	ND		3.5	0.65	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,4-Dichlorobenzene	ND		3.5	0.78	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
2-Butanone (MEK)	ND		14	2.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
2-Hexanone	ND		14	3.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
4-Methyl-2-pentanone (MIBK)	ND		14	3.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Acetone	ND		14	3.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Benzene	ND		3.5	0.59	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Dichlorobromomethane	ND		3.5	0.86	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Bromoform	ND		3.5	3.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Bromomethane	ND		3.5	2.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Carbon disulfide	ND		3.5	1.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Carbon tetrachloride	ND		3.5	1.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chlorobenzene	ND		3.5	0.50	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloroethane	ND		3.5	2.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloroform	ND		3.5	0.76	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloromethane	ND		3.5	0.93	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
cis-1,2-Dichloroethene	ND		3.5	0.57	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
cis-1,3-Dichloropropene	ND		3.5	1.8	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Cyclohexane	ND		7.1	2.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chlorodibromomethane	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Dichlorodifluoromethane	ND		3.5	0.75	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Ethylbenzene	ND		3.5	0.67	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Isopropylbenzene	ND		3.5	0.54	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methyl acetate	ND		18	2.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methyl tert-butyl ether	ND		3.5	0.52	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methylcyclohexane	ND		7.1	0.93	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methylene Chloride	ND		7.1	5.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Styrene	ND		3.5	0.74	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Tetrachloroethene	ND		3.5	1.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Toluene	ND		3.5	3.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
trans-1,2-Dichloroethene	ND		3.5	0.88	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
trans-1,3-Dichloropropene	ND		3.5	1.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Trichloroethene	ND		3.5	2.0	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Trichlorofluoromethane	ND		3.5	1.9	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Vinyl chloride	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Xylenes, Total	ND		7.1	1.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	03/24/23 22:04	03/25/23 12:44	1
Dibromofluoromethane (Surr)	83		41 - 138	03/24/23 22:04	03/25/23 12:44	1
4-Bromofluorobenzene (Surr)	65		41 - 143	03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	03/24/23 22:04	03/25/23 12:44	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Chlorophenol	ND		1.2	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Methylnaphthalene	ND		0.35	0.046	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Methylphenol	ND		4.7	0.73	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Nitroaniline	ND		4.7	0.94	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Nitrophenol	ND		1.2	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3-Nitroaniline	ND		4.7	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chloroaniline	ND		3.5	0.70	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Nitroaniline	ND		4.7	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Nitrophenol	ND		7.7	2.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acenaphthene	ND		0.35	0.067	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acenaphthylene	ND		0.35	0.094	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acetophenone	ND		2.3	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Anthracene	ND		0.35	0.056	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Atrazine	ND		4.7	0.84	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzaldehyde	ND		2.3	0.54	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[a]anthracene	ND		0.35	0.080	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[a]pyrene	ND		0.35	0.22	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[b]fluoranthene	ND		0.35	0.15	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[g,h,i]perylene	ND		0.35	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[k]fluoranthene	ND		0.35	0.16	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Caprolactam	ND		7.7	1.8	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Carbazole	ND		1.2	0.45	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Chrysene	ND		0.35	0.035	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg		03/22/23 08:13	03/24/23 15:21	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.2	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Diethyl phthalate	ND		1.6	0.73	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Dimethyl phthalate	ND		1.6	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Fluoranthene	ND		0.35	0.10	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Fluorene	ND		0.35	0.064	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorobenzene	ND		0.35	0.067	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorocyclopentadiene	ND		7.7	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachloroethane	ND		1.2	0.21	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Indeno[1,2,3-cd]pyrene	ND		0.35	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Isophorone	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Naphthalene	ND		0.35	0.056	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Nitrobenzene	ND		2.3	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Pentachlorophenol	ND		3.5	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Phenanthrene	ND		0.35	0.052	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Phenol	ND		1.2	0.19	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Pyrene	ND		0.35	0.050	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg		03/22/23 08:13	03/24/23 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	97		46 - 137	03/22/23 08:13	03/24/23 15:21	1
Phenol-d5 (Surr)	45		26 - 120	03/22/23 08:13	03/24/23 15:21	1
Nitrobenzene-d5 (Surr)	38		25 - 120	03/22/23 08:13	03/24/23 15:21	1
2-Fluorophenol (Surr)	43		20 - 120	03/22/23 08:13	03/24/23 15:21	1
2-Fluorobiphenyl (Surr)	58		34 - 120	03/22/23 08:13	03/24/23 15:21	1
2,4,6-Tribromophenol (Surr)	93		10 - 120	03/22/23 08:13	03/24/23 15:21	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0082	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:11	1
Barium	0.036	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:11	1
Cadmium	0.00034	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:11	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:11	1
Lead	0.0066	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:11	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:11	1
Silver	ND		0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:11	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 18:05	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.64	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.55	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2-Trichloroethane	ND		2.0	0.47	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1-Dichloroethane	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1-Dichloroethene	ND		2.0	0.67	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2,4-Trichlorobenzene	ND		2.0	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dibromo-3-Chloropropane	ND		4.1	1.8	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Ethylene Dibromide	ND		2.0	0.65	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichlorobenzene	ND		2.0	0.98	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloroethane	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloropropane	ND		2.0	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,3-Dichlorobenzene	ND		2.0	0.38	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,4-Dichlorobenzene	ND		2.0	0.45	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
2-Butanone (MEK)	ND		8.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
2-Hexanone	ND		8.2	2.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
4-Methyl-2-pentanone (MIBK)	ND		8.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Acetone	ND		8.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Benzene	ND		2.0	0.34	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Dichlorobromomethane	ND		2.0	0.50	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Bromoform	ND		2.0	1.9	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Bromomethane	ND		2.0	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Carbon disulfide	ND		2.0	0.89	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Carbon tetrachloride	ND		2.0	0.84	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chlorobenzene	ND		2.0	0.29	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloroethane	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloroform	ND		2.0	0.44	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloromethane	ND		2.0	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
cis-1,2-Dichloroethene	ND		2.0	0.33	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
cis-1,3-Dichloropropene	ND		2.0	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Cyclohexane	ND		4.1	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chlorodibromomethane	ND		2.0	0.96	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Dichlorodifluoromethane	ND		2.0	0.43	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Ethylbenzene	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Isopropylbenzene	ND		2.0	0.31	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methyl acetate	ND		10	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methyl tert-butyl ether	ND		2.0	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methylcyclohexane	ND		4.1	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methylene Chloride	ND		4.1	3.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Styrene	ND		2.0	0.43	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Tetrachloroethene	ND		2.0	0.80	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Toluene	ND		2.0	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
trans-1,2-Dichloroethene	ND		2.0	0.51	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
trans-1,3-Dichloropropene	ND		2.0	0.86	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Trichloroethene	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Trichlorofluoromethane	ND		2.0	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Vinyl chloride	ND		2.0	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Xylenes, Total	ND		4.1	0.75	mg/Kg		03/24/23 22:04	03/25/23 13:06	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/24/23 22:04	03/25/23 13:06	1
Dibromofluoromethane (Surr)	80		41 - 138	03/24/23 22:04	03/25/23 13:06	1
4-Bromofluorobenzene (Surr)	63		41 - 143	03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/24/23 22:04	03/25/23 13:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.4	0.47	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
bis (2-chloroisopropyl) ether	ND		2.8	0.28	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4,5-Trichlorophenol	ND		4.2	1.9	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4,6-Trichlorophenol	ND		4.2	1.8	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dichlorophenol	ND		4.2	1.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dimethylphenol	ND		4.2	1.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dinitrophenol	ND		9.2	3.9	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dinitrotoluene	ND		5.6	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,6-Dinitrotoluene	ND		5.6	1.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Chloronaphthalene	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Chlorophenol	ND		1.4	0.28	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Methylnaphthalene	ND		0.42	0.054	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Methylphenol	ND		5.6	0.86	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Nitroaniline	ND		5.6	1.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Nitrophenol	ND		1.4	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3,3'-Dichlorobenzidine	ND		2.8	1.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3-Nitroaniline	ND		5.6	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4,6-Dinitro-2-methylphenol	ND		9.2	2.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Bromophenyl phenyl ether	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chloro-3-methylphenol	ND		4.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chloroaniline	ND		4.2	0.83	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chlorophenyl phenyl ether	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Nitroaniline	ND		5.6	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Nitrophenol	ND		9.2	2.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acenaphthene	ND		0.42	0.079	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acenaphthylene	ND		0.42	0.11	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acetophenone	ND		2.8	0.31	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Anthracene	ND		0.42	0.067	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Atrazine	ND		5.6	1.0	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzaldehyde	ND		2.8	0.64	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[a]anthracene	ND		0.42	0.095	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[a]pyrene	ND		0.42	0.26	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[b]fluoranthene	ND		0.42	0.18	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[g,h,i]perylene	ND		0.42	0.20	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[k]fluoranthene	ND		0.42	0.19	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-chloroethoxy)methane	ND		2.8	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-chloroethyl)ether	ND		2.8	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-ethylhexyl) phthalate	ND		1.9	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Butyl benzyl phthalate	ND		1.9	0.61	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Caprolactam	ND		9.2	2.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Carbazole	ND		1.4	0.53	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Chrysene	ND		0.42	0.041	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Dibenz(a,h)anthracene	ND		0.42	0.19	mg/Kg		03/22/23 08:13	03/24/23 14:58	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.4	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Diethyl phthalate	ND		1.9	0.86	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Dimethyl phthalate	ND		1.9	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Di-n-butyl phthalate	ND		1.9	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Di-n-octyl phthalate	ND		1.9	0.78	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Fluoranthene	ND		0.42	0.12	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Fluorene	ND		0.42	0.076	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorobenzene	ND		0.42	0.079	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorobutadiene	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorocyclopentadiene	ND		9.2	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachloroethane	ND		1.4	0.25	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Indeno[1,2,3-cd]pyrene	ND		0.42	0.20	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Isophorone	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
N-Nitrosodi-n-propylamine	ND		1.4	0.31	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
N-Nitrosodiphenylamine	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Naphthalene	0.13	J	0.42	0.067	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Nitrobenzene	ND		2.8	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Pentachlorophenol	ND		4.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Phenanthrene	ND		0.42	0.062	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Phenol	ND		1.4	0.22	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Pyrene	ND		0.42	0.059	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3 & 4 Methylphenol	ND		11	0.81	mg/Kg		03/22/23 08:13	03/24/23 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	99		46 - 137	03/22/23 08:13	03/24/23 14:58	1
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 14:58	1
Nitrobenzene-d5 (Surr)	60		25 - 120	03/22/23 08:13	03/24/23 14:58	1
2-Fluorophenol (Surr)	64		20 - 120	03/22/23 08:13	03/24/23 14:58	1
2-Fluorobiphenyl (Surr)	75		34 - 120	03/22/23 08:13	03/24/23 14:58	1
2,4,6-Tribromophenol (Surr)	86		10 - 120	03/22/23 08:13	03/24/23 14:58	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0048	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:53	1
Barium	0.068	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:53	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:53	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:53	1
Lead	0.0077	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:53	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:53	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:53	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:13	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.2	0.68	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2,2-Tetrachloroethane	ND		2.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.2	0.58	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2-Trichloroethane	ND		2.2	0.49	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1-Dichloroethane	ND		2.2	0.42	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1-Dichloroethene	ND		2.2	0.71	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2,4-Trichlorobenzene	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dibromo-3-Chloropropane	ND		4.3	1.9	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Ethylene Dibromide	ND		2.2	0.68	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichlorobenzene	ND		2.2	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloroethane	ND		2.2	0.41	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloropropane	ND		2.2	0.32	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,3-Dichlorobenzene	ND		2.2	0.40	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,4-Dichlorobenzene	ND		2.2	0.48	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
2-Butanone (MEK)	ND		8.7	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
2-Hexanone	ND		8.7	2.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
4-Methyl-2-pentanone (MIBK)	ND		8.7	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Acetone	ND		8.7	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Benzene	ND		2.2	0.36	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Dichlorobromomethane	ND		2.2	0.53	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Bromoform	ND		2.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Bromomethane	ND		2.2	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Carbon disulfide	ND		2.2	0.94	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Carbon tetrachloride	ND		2.2	0.88	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chlorobenzene	ND		2.2	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloroethane	ND		2.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloroform	ND		2.2	0.47	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloromethane	ND		2.2	0.57	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
cis-1,2-Dichloroethene	ND		2.2	0.35	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
cis-1,3-Dichloropropene	ND		2.2	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Cyclohexane	ND		4.3	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chlorodibromomethane	ND		2.2	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Dichlorodifluoromethane	ND		2.2	0.46	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Ethylbenzene	ND		2.2	0.41	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Isopropylbenzene	ND		2.2	0.33	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methyl acetate	ND		11	1.5	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methyl tert-butyl ether	ND		2.2	0.32	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methylcyclohexane	ND		4.3	0.57	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methylene Chloride	ND		4.3	3.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Styrene	ND		2.2	0.45	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Tetrachloroethene	ND		2.2	0.84	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Toluene	ND		2.2	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
trans-1,2-Dichloroethene	ND		2.2	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
trans-1,3-Dichloropropene	ND		2.2	0.91	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Trichloroethene	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Trichlorofluoromethane	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Vinyl chloride	ND		2.2	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Xylenes, Total	ND		4.3	0.79	mg/Kg		03/24/23 22:04	03/25/23 13:27	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	85		56 - 125	03/24/23 22:04	03/25/23 13:27	1
Dibromofluoromethane (Surr)	85		41 - 138	03/24/23 22:04	03/25/23 13:27	1
4-Bromofluorobenzene (Surr)	70		41 - 143	03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	03/24/23 22:04	03/25/23 13:27	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.44	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
bis (2-chloroisopropyl) ether	ND		2.6	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4,5-Trichlorophenol	ND		3.9	1.8	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4,6-Trichlorophenol	ND		3.9	1.7	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dichlorophenol	ND		3.9	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dimethylphenol	ND		3.9	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dinitrophenol	ND		8.5	3.7	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dinitrotoluene	ND		5.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,6-Dinitrotoluene	ND		5.2	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Chlorophenol	ND		1.3	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Methylnaphthalene	ND		0.39	0.051	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Methylphenol	ND		5.2	0.80	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Nitroaniline	ND		5.2	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Nitrophenol	ND		1.3	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3,3'-Dichlorobenzidine	ND		2.6	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3-Nitroaniline	ND		5.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4,6-Dinitro-2-methylphenol	ND		8.5	2.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chloro-3-methylphenol	ND		3.9	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chloroaniline	ND		3.9	0.78	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Nitroaniline	ND		5.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Nitrophenol	ND		8.5	2.4	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acenaphthene	ND		0.39	0.074	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acenaphthylene	ND		0.39	0.10	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acetophenone	ND		2.6	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Anthracene	ND		0.39	0.062	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Atrazine	ND		5.2	0.93	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzaldehyde	ND		2.6	0.59	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[a]anthracene	ND		0.39	0.088	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[a]pyrene	ND		0.39	0.24	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[b]fluoranthene	ND		0.39	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[g,h,i]perylene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[k]fluoranthene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-chloroethoxy)methane	ND		2.6	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-chloroethyl)ether	ND		2.6	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Butyl benzyl phthalate	ND		1.8	0.57	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Caprolactam	ND		8.5	1.9	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Carbazole	ND		1.3	0.49	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Chrysene	ND		0.39	0.039	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Dibenz(a,h)anthracene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.3	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Diethyl phthalate	ND		1.8	0.80	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Dimethyl phthalate	ND		1.8	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Di-n-octyl phthalate	ND		1.8	0.72	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Fluoranthene	ND		0.39	0.12	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Fluorene	ND		0.39	0.071	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorobenzene	ND		0.39	0.074	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorobutadiene	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorocyclopentadiene	ND		8.5	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachloroethane	ND		1.3	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Indeno[1,2,3-cd]pyrene	ND		0.39	0.19	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Isophorone	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
N-Nitrosodiphenylamine	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Naphthalene	ND		0.39	0.062	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Nitrobenzene	ND		2.6	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Pentachlorophenol	ND		3.9	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Phenanthrene	ND		0.39	0.058	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Phenol	ND		1.3	0.21	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Pyrene	ND		0.39	0.055	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3 & 4 Methylphenol	ND		10	0.75	mg/Kg		03/22/23 08:13	03/24/23 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	108		46 - 137	03/22/23 08:13	03/24/23 15:44	1
Phenol-d5 (Surr)	53		26 - 120	03/22/23 08:13	03/24/23 15:44	1
Nitrobenzene-d5 (Surr)	46		25 - 120	03/22/23 08:13	03/24/23 15:44	1
2-Fluorophenol (Surr)	51		20 - 120	03/22/23 08:13	03/24/23 15:44	1
2-Fluorobiphenyl (Surr)	62		34 - 120	03/22/23 08:13	03/24/23 15:44	1
2,4,6-Tribromophenol (Surr)	98		10 - 120	03/22/23 08:13	03/24/23 15:44	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0066	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:58	1
Barium	0.020	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:58	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:58	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:58	1
Lead	0.0050	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:58	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:58	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:58	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:15	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		59	18	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2,2-Tetrachloroethane	ND		59	35	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		59	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2-Trichloroethane	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1-Dichloroethane	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1-Dichloroethene	ND		59	19	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2,4-Trichlorobenzene	ND		59	31	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dibromo-3-Chloropropane	ND		120	52	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Ethylene Dibromide	ND		59	19	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichlorobenzene	ND		59	28	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloroethane	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloropropane	ND		59	8.7	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,3-Dichlorobenzene	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,4-Dichlorobenzene	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
2-Butanone (MEK)	ND		240	37	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
2-Hexanone	ND		240	62	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
4-Methyl-2-pentanone (MIBK)	ND		240	56	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Acetone	ND		240	57	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Benzene	ND		59	9.9	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Dichlorobromomethane	ND		59	14	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Bromoform	ND		59	54	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Bromomethane	ND		59	39	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Carbon disulfide	ND		59	25	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Carbon tetrachloride	ND		59	24	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chlorobenzene	ND		59	8.2	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloroethane	ND		59	35	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloroform	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloromethane	ND		59	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
cis-1,2-Dichloroethene	ND		59	9.4	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
cis-1,3-Dichloropropene	ND		59	29	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Cyclohexane	ND		120	38	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chlorodibromomethane	ND		59	28	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Dichlorodifluoromethane	ND		59	12	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Ethylbenzene	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Isopropylbenzene	ND		59	8.9	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methyl acetate	ND		290	40	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methyl tert-butyl ether	ND		59	8.7	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methylcyclohexane	ND		120	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methylene Chloride	ND		120	90	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Styrene	ND		59	12	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Tetrachloroethene	ND		59	23	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Toluene	ND		59	56	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
trans-1,2-Dichloroethene	ND		59	15	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
trans-1,3-Dichloropropene	ND		59	25	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Trichloroethene	ND		59	34	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Trichlorofluoromethane	ND		59	32	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Vinyl chloride	ND		59	29	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Xylenes, Total	ND		120	21	mg/Kg		03/24/23 22:04	03/28/23 08:39	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	88		56 - 125	03/24/23 22:04	03/28/23 08:39	20
Dibromofluoromethane (Surr)	87		41 - 138	03/24/23 22:04	03/28/23 08:39	20
4-Bromofluorobenzene (Surr)	73		41 - 143	03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	03/24/23 22:04	03/28/23 08:39	20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.3	2.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4,5-Trichlorophenol	ND		19	8.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4,6-Trichlorophenol	ND		19	8.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dichlorophenol	ND		19	5.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dimethylphenol	ND		19	5.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dinitrophenol	ND		41	18	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dinitrotoluene	ND		25	7.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,6-Dinitrotoluene	ND		25	7.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Chloronaphthalene	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Chlorophenol	ND		6.3	1.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Methylnaphthalene	ND		1.9	0.25	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Methylphenol	ND		25	3.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Nitroaniline	ND		25	5.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Nitrophenol	ND		6.3	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3,3'-Dichlorobenzidine	ND		13	5.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3-Nitroaniline	ND		25	6.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4,6-Dinitro-2-methylphenol	ND		41	10	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Bromophenyl phenyl ether	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chloro-3-methylphenol	ND		19	5.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chloroaniline	ND		19	3.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chlorophenyl phenyl ether	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Nitroaniline	ND		25	7.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Nitrophenol	ND		41	12	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acenaphthene	ND		1.9	0.36	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acenaphthylene	ND		1.9	0.50	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acetophenone	ND		13	1.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Anthracene	ND		1.9	0.30	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Atrazine	ND		25	4.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzaldehyde	ND		13	2.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[a]anthracene	0.50	J	1.9	0.43	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[a]pyrene	ND		1.9	1.2	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[b]fluoranthene	1.0	J	1.9	0.81	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[g,h,i]perylene	ND		1.9	0.89	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[k]fluoranthene	ND		1.9	0.87	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-chloroethoxy)methane	ND		13	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-chloroethyl)ether	ND		13	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-ethylhexyl) phthalate	ND		8.8	6.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Butyl benzyl phthalate	3.4	J	8.8	2.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Caprolactam	ND		41	9.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Carbazole	ND		6.3	2.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Chrysene	ND		1.9	0.19	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Dibenz(a,h)anthracene	ND		1.9	0.87	mg/Kg		03/22/23 08:13	03/24/23 17:38	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		6.3	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Diethyl phthalate	ND		8.8	3.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Dimethyl phthalate	ND		8.8	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Di-n-butyl phthalate	ND		8.8	6.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Di-n-octyl phthalate	ND		8.8	3.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Fluoranthene	0.78	J	1.9	0.56	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Fluorene	ND		1.9	0.34	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorobenzene	ND		1.9	0.36	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorobutadiene	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorocyclopentadiene	ND		41	7.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachloroethane	ND		6.3	1.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Indeno[1,2,3-cd]pyrene	ND		1.9	0.92	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Isophorone	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
N-Nitrosodi-n-propylamine	ND		6.3	1.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
N-Nitrosodiphenylamine	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Naphthalene	ND		1.9	0.30	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Nitrobenzene	ND		13	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Pentachlorophenol	ND		19	7.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Phenanthrene	0.96	J	1.9	0.28	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Phenol	ND		6.3	1.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Pyrene	0.82	J	1.9	0.27	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3 & 4 Methylphenol	ND		50	3.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	03/22/23 08:13	03/24/23 17:38	5
Phenol-d5 (Surr)	73		26 - 120	03/22/23 08:13	03/24/23 17:38	5
Nitrobenzene-d5 (Surr)	65		25 - 120	03/22/23 08:13	03/24/23 17:38	5
2-Fluorophenol (Surr)	65		20 - 120	03/22/23 08:13	03/24/23 17:38	5
2-Fluorobiphenyl (Surr)	83		34 - 120	03/22/23 08:13	03/24/23 17:38	5
2,4,6-Tribromophenol (Surr)	88		10 - 120	03/22/23 08:13	03/24/23 17:38	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0075	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 19:02	1
Barium	0.080	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 19:02	1
Cadmium	0.00041	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 19:02	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 19:02	1
Lead	0.0077	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 19:02	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 19:02	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 19:02	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:17	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		9.0	2.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2,2-Tetrachloroethane	ND		9.0	5.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		9.0	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2-Trichloroethane	ND		9.0	2.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1-Dichloroethane	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1-Dichloroethene	ND		9.0	2.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2,4-Trichlorobenzene	ND		9.0	4.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dibromo-3-Chloropropane	ND		18	7.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Ethylene Dibromide	ND		9.0	2.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichlorobenzene	ND		9.0	4.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloroethane	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloropropane	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,3-Dichlorobenzene	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,4-Dichlorobenzene	ND		9.0	2.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
2-Butanone (MEK)	ND		36	5.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
2-Hexanone	ND		36	9.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
4-Methyl-2-pentanone (MIBK)	ND		36	8.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Acetone	ND		36	8.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Benzene	ND		9.0	1.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Dichlorobromomethane	ND		9.0	2.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Bromoform	ND		9.0	8.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Bromomethane	ND		9.0	6.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Carbon disulfide	ND		9.0	3.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Carbon tetrachloride	ND		9.0	3.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chlorobenzene	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloroethane	ND		9.0	5.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloroform	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloromethane	ND		9.0	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
cis-1,2-Dichloroethene	ND		9.0	1.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
cis-1,3-Dichloropropene	ND		9.0	4.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Cyclohexane	ND		18	5.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chlorodibromomethane	ND		9.0	4.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Dichlorodifluoromethane	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Ethylbenzene	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Isopropylbenzene	ND		9.0	1.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methyl acetate	ND		45	6.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methyl tert-butyl ether	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methylcyclohexane	ND		18	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methylene Chloride	ND		18	14	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Styrene	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Tetrachloroethene	ND		9.0	3.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Toluene	ND		9.0	8.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
trans-1,2-Dichloroethene	ND		9.0	2.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
trans-1,3-Dichloropropene	ND		9.0	3.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Trichloroethene	ND		9.0	5.1	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Trichlorofluoromethane	ND		9.0	4.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Vinyl chloride	ND		9.0	4.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Xylenes, Total	ND		18	3.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	75		56 - 125	03/24/23 22:04	03/28/23 09:00	4
Dibromofluoromethane (Surr)	81		41 - 138	03/24/23 22:04	03/28/23 09:00	4
4-Bromofluorobenzene (Surr)	64		41 - 143	03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/24/23 22:04	03/28/23 09:00	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
bis (2-chloroisopropyl) ether	ND		6.1	0.61	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4,5-Trichlorophenol	ND		9.1	4.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4,6-Trichlorophenol	ND		9.1	3.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dichlorophenol	ND		9.1	2.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dimethylphenol	ND		9.1	2.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dinitrophenol	ND		20	8.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dinitrotoluene	ND		12	3.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Chloronaphthalene	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Chlorophenol	ND		3.0	0.61	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Methylnaphthalene	ND		0.91	0.12	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Methylphenol	ND		12	1.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Nitroaniline	ND		12	2.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Nitrophenol	ND		3.0	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3,3'-Dichlorobenzidine	ND		6.1	2.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3-Nitroaniline	ND		12	3.0	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Bromophenyl phenyl ether	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chloro-3-methylphenol	ND		9.1	2.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chloroaniline	ND		9.1	1.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chlorophenyl phenyl ether	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Nitroaniline	ND		12	3.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Nitrophenol	ND		20	5.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acenaphthene	0.23	J	0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acenaphthylene	ND		0.91	0.24	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acetophenone	ND		6.1	0.67	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Anthracene	ND		0.91	0.15	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Atrazine	ND		12	2.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzaldehyde	ND		6.1	1.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[a]anthracene	0.34	J	0.91	0.21	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[a]pyrene	ND		0.91	0.57	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[b]fluoranthene	ND		0.91	0.39	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[g,h,i]perylene	ND		0.91	0.43	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[k]fluoranthene	ND		0.91	0.42	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-chloroethoxy)methane	ND		6.1	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-chloroethyl)ether	ND		6.1	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-ethylhexyl) phthalate	4.1	J	4.2	3.1	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Caprolactam	ND		20	4.5	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Carbazole	ND		3.0	1.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Chrysene	0.37	J	0.91	0.090	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Dibenz(a,h)anthracene	ND		0.91	0.42	mg/Kg		03/22/23 08:13	03/24/23 18:01	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		3.0	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Diethyl phthalate	ND		4.2	1.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Dimethyl phthalate	ND		4.2	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Di-n-butyl phthalate	ND		4.2	3.1	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Fluoranthene	1.2		0.91	0.27	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Fluorene	0.20	J	0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorobenzene	ND		0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorobutadiene	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorocyclopentadiene	ND		20	3.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachloroethane	ND		3.0	0.55	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Indeno[1,2,3-cd]pyrene	ND		0.91	0.45	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Isophorone	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
N-Nitrosodi-n-propylamine	ND		3.0	0.67	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
N-Nitrosodiphenylamine	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Naphthalene	ND		0.91	0.15	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Nitrobenzene	ND		6.1	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Pentachlorophenol	ND		9.1	3.5	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Phenanthrene	0.90	J	0.91	0.14	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Phenol	ND		3.0	0.48	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Pyrene	1.2		0.91	0.13	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3 & 4 Methylphenol	ND		24	1.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/22/23 08:13	03/24/23 18:01	4
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 18:01	4
Nitrobenzene-d5 (Surr)	54		25 - 120	03/22/23 08:13	03/24/23 18:01	4
2-Fluorophenol (Surr)	61		20 - 120	03/22/23 08:13	03/24/23 18:01	4
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 18:01	4
2,4,6-Tribromophenol (Surr)	65		10 - 120	03/22/23 08:13	03/24/23 18:01	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 19:15	1
Barium	0.066	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 19:15	1
Cadmium	0.00038	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 19:15	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 19:15	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 19:15	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 19:15	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 19:15	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:19	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 12:54	1

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	82	84	77	86
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	73 *3	95 *3	77 *3	122 *3
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	122	106	127	117
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	119	102	119	118
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	82	76	80	83
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	128 S1+	108	138	116
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	86	86	69	87
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	80	83	73	92
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	121	105	126	116
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	80	89	73	94
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	84	84	70	94
240-182202-13	WC-SB1188-SOIL + DEBRIS	122	112	127	128 S1+
240-182202-14	WC-AMU112-SOIL + DEBRIS	90	86	59	98
240-182202-15	WC-SB2655-SOIL + DEBRIS	107	83	53	89
240-182202-16	WC-SB2455-SOIL + DEBRIS	107	95	54	107
240-182202-18	WC-SB2418-ABSORBENTS	79	83	65	84
240-182202-19	WC-SB1833-ABSORBENTS	80	80	63	87
240-182202-20	WC-SB2446-ABSORBENTS	85	85	70	90
240-182202-21	WC-SB1450-ABSORBENTS	88	87	73	93
240-182202-22	WC-SB1905-ABSORBENTS	75	81	64	87
240-182202-22 MS	WC-SB1905-ABSORBENTS	81	83	76	80
240-182202-22 MSD	WC-SB1905-ABSORBENTS	83	80	77	81
LCS 240-566108/2-A	Lab Control Sample	81	83	77	82
LCS 240-566133/6	Lab Control Sample	91	88	86	88
LCS 240-566249/3	Lab Control Sample	113	105	113	110
LCS 240-566719/2-A	Lab Control Sample	82	79	75	79
MB 240-566108/1-A	Method Blank	81	77	69	86
MB 240-566125/2-A	Method Blank	80	80	68	87
MB 240-566125/3-A	Method Blank	114	105	116	116
MB 240-566133/7	Method Blank	79	78	71	82
MB 240-566719/1-A	Method Blank	80	80	62	84

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-566367/10	Lab Control Sample	91	92	101	97

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	95	98	108	100
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	87	86	92	92
240-182202-17	WC-COMP-SOIL + DEBRIS	97	96	108	102
LB 240-566129/1-A MB	Method Blank	89	93	100	98

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	87	61	40	45	61	48
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	88	64	53	62	73	52
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	85	58	42	45	63	55
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	93	53	39	44	57	55
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	83	47	33	38	50	42
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	89	69	51	54	80	61
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	107	65	48	54	77	98
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	94	59	46	53	64	79
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	94	50	42	48	54	87
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	95	51	42	49	48	68
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	101	78	66	77	80	96
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	94	52	41	48	56	90
240-182202-13	WC-SB1188-SOIL + DEBRIS	89	62	40	55	66	102
240-182202-14	WC-AMU112-SOIL + DEBRIS	67	67	52	65	61	83
240-182202-15	WC-SB2655-SOIL + DEBRIS	82	68	54	64	72	86
240-182202-16	WC-SB2455-SOIL + DEBRIS	92	51	42	47	57	96
240-182202-18	WC-SB2418-ABSORBENTS	97	45	38	43	58	93
240-182202-19	WC-SB1833-ABSORBENTS	99	67	60	64	75	86
240-182202-20	WC-SB2446-ABSORBENTS	108	53	46	51	62	98
240-182202-21	WC-SB1450-ABSORBENTS	106	73	65	65	83	88
240-182202-22	WC-SB1905-ABSORBENTS	101	67	54	61	80	65
LCS 240-566295/2-A	Lab Control Sample	124	59	55	60	63	112
MB 240-566295/1-A	Method Blank	103	36	33	33	40	33

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-566221/9-A	Lab Control Sample	112	68	84	76	94	123 S1+
MB 240-566221/8-A	Method Blank	121	65	81	73	93	116

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	118	61	76	70	91	114
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	115	52	66	57	84	112
240-182202-17	WC-COMP-SOIL + DEBRIS	118	62	80	72	95	110

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-566222/6-A	Lab Control Sample	69	67	65	71
MB 240-566222/5-A	Method Blank	71	69	69	73

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	80	79	63	67
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	84	75	65	67
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	76	69	66	64

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182202-17	WC-COMP-SOIL + DEBRIS	74	71	66	68

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (10-149)	TCX2 (10-149)	DCBP1 (10-174)	DCBP2 (10-174)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	88	88	86	82
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	88		88	
240-182202-17	WC-COMP-SOIL + DEBRIS	86		74	
LCS 240-566161/2-A	Lab Control Sample	98		83	
MB 240-566161/1-A	Method Blank	86		75	

Surrogate Legend
 TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-356959/3-A	Lab Control Sample	58	64
LCSD 410-356959/4-A	Lab Control Sample Dup	60	67
MB 410-356959/2-A	Method Blank	52	57

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	53	61
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	57	65
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	53	59
240-182202-17	WC-COMP-SOIL + DEBRIS	51	57

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-566108/1-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566108

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Acetone	ND		1.0	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Benzene	ND		0.25	0.042	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Bromoform	ND		0.25	0.23	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloroform	ND		0.25	0.054	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Styrene	ND		0.25	0.052	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Toluene	ND		0.25	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/20/23 14:08	03/21/23 15:06	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566108/1-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566108

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	81		56 - 125	03/20/23 14:08	03/21/23 15:06	1
Dibromofluoromethane (Surr)	77		41 - 138	03/20/23 14:08	03/21/23 15:06	1
4-Bromofluorobenzene (Surr)	69		41 - 143	03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloroethane-d4 (Surr)	86		58 - 125	03/20/23 14:08	03/21/23 15:06	1

Lab Sample ID: LCS 240-566108/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	1.25	1.22		mg/Kg		98	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.29		mg/Kg		104	64 - 148
1,1,2-Trichloroethane	1.25	1.28		mg/Kg		102	79 - 120
1,1-Dichloroethane	1.25	1.18		mg/Kg		94	74 - 121
1,1-Dichloroethene	1.25	1.19		mg/Kg		95	68 - 141
1,2,4-Trichlorobenzene	1.25	0.988		mg/Kg		79	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.852		mg/Kg		68	52 - 133
Ethylene Dibromide	1.25	1.22		mg/Kg		98	80 - 121
1,2-Dichlorobenzene	1.25	1.18		mg/Kg		95	73 - 120
1,2-Dichloroethane	1.25	1.29		mg/Kg		103	71 - 123
1,2-Dichloropropane	1.25	1.22		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	1.25	1.09		mg/Kg		87	73 - 120
1,4-Dichlorobenzene	1.25	1.10		mg/Kg		88	74 - 120
2-Butanone (MEK)	2.50	2.92		mg/Kg		117	63 - 142
2-Hexanone	2.50	2.51		mg/Kg		100	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.26		mg/Kg		90	62 - 142
Acetone	2.50	3.35		mg/Kg		134	58 - 160
Benzene	1.25	1.23		mg/Kg		98	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		86	71 - 138
Bromoform	1.25	0.913		mg/Kg		73	57 - 140
Bromomethane	1.25	0.810		mg/Kg		65	10 - 171
Carbon disulfide	1.25	0.935		mg/Kg		75	43 - 152
Carbon tetrachloride	1.25	1.20		mg/Kg		96	64 - 144
Chlorobenzene	1.25	1.18		mg/Kg		94	80 - 120
Chloroethane	1.25	1.02		mg/Kg		82	11 - 164
Chloroform	1.25	1.31		mg/Kg		105	78 - 120
Chloromethane	1.25	0.800		mg/Kg		64	41 - 142
cis-1,2-Dichloroethene	1.25	1.23		mg/Kg		99	78 - 124
cis-1,3-Dichloropropene	1.25	0.936		mg/Kg		75	70 - 133
Cyclohexane	1.25	1.17		mg/Kg		94	65 - 137
Chlorodibromomethane	1.25	0.999		mg/Kg		80	68 - 131
Dichlorodifluoromethane	1.25	0.795		mg/Kg		64	21 - 150
Ethylbenzene	1.25	1.16		mg/Kg		93	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		98	80 - 130
Methyl acetate	2.50	2.65		mg/Kg		106	60 - 133
Methyl tert-butyl ether	1.25	1.17		mg/Kg		94	70 - 130
Methylcyclohexane	1.25	1.11		mg/Kg		89	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566108/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	1.09		mg/Kg		87	71 - 124
Styrene	1.25	1.25		mg/Kg		100	75 - 140
Tetrachloroethene	1.25	1.15		mg/Kg		92	76 - 127
Toluene	1.25	1.23		mg/Kg		98	80 - 120
trans-1,2-Dichloroethene	1.25	1.23		mg/Kg		98	76 - 130
trans-1,3-Dichloropropene	1.25	0.912		mg/Kg		73	61 - 121
Trichloroethene	1.25	1.14		mg/Kg		91	74 - 130
Trichlorofluoromethane	1.25	1.06		mg/Kg		85	50 - 154
Vinyl chloride	1.25	0.984		mg/Kg		79	49 - 146
Xylenes, Total	2.50	2.42		mg/Kg		97	80 - 122
m-Xylene & p-Xylene	1.25	1.16		mg/Kg		93	80 - 122
o-Xylene	1.25	1.26		mg/Kg		101	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	83		41 - 138
4-Bromofluorobenzene (Surr)	77		41 - 143
1,2-Dichloroethane-d4 (Surr)	82		58 - 125

Lab Sample ID: MB 240-566125/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Acetone	ND		0.025	0.021	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/21/23 10:27	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/20/23 17:03	03/21/23 10:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/20/23 17:03	03/21/23 10:27	1
Dibromofluoromethane (Surr)	80		41 - 138	03/20/23 17:03	03/21/23 10:27	1
4-Bromofluorobenzene (Surr)	68		41 - 143	03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/20/23 17:03	03/21/23 10:27	1

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0030	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethane	ND		0.0050	0.00096	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethene	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0044	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylene Dibromide	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichlorobenzene	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloropropane	ND		0.0050	0.00074	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,3-Dichlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,4-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Butanone (MEK)	ND		0.020	0.0031	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Hexanone	ND		0.020	0.0053	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0048	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Acetone	0.00954	J	0.020	0.0049	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Benzene	ND		0.0050	0.00084	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorobromomethane	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromoform	ND		0.0050	0.0046	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromomethane	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon disulfide	ND		0.0050	0.0022	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon tetrachloride	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorobenzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroethane	ND		0.0050	0.0030	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroform	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloromethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,2-Dichloroethene	ND		0.0050	0.00080	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,3-Dichloropropene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Cyclohexane	ND		0.010	0.0033	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorodibromomethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorodifluoromethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylbenzene	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Isopropylbenzene	ND		0.0050	0.00076	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl tert-butyl ether	ND		0.0050	0.00074	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylcyclohexane	ND		0.010	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylene Chloride	ND		0.010	0.0077	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Styrene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Tetrachloroethene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Toluene	ND		0.0050	0.0048	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,2-Dichloroethene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,3-Dichloropropene	ND		0.0050	0.0021	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichloroethene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Vinyl chloride	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Xylenes, Total	ND		0.010	0.0018	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	114		56 - 125	03/20/23 17:03	03/21/23 19:25	1
Dibromofluoromethane (Surr)	105		41 - 138	03/20/23 17:03	03/21/23 19:25	1
4-Bromofluorobenzene (Surr)	116		41 - 143	03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/20/23 17:03	03/21/23 19:25	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566133/7
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg			03/21/23 05:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg			03/21/23 05:49	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg			03/21/23 05:49	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg			03/21/23 05:49	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg			03/21/23 05:49	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg			03/21/23 05:49	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg			03/21/23 05:49	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg			03/21/23 05:49	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg			03/21/23 05:49	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg			03/21/23 05:49	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg			03/21/23 05:49	1
2-Hexanone	ND		0.020	0.0041	mg/Kg			03/21/23 05:49	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg			03/21/23 05:49	1
Acetone	ND		0.025	0.021	mg/Kg			03/21/23 05:49	1
Benzene	ND		0.0050	0.00070	mg/Kg			03/21/23 05:49	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg			03/21/23 05:49	1
Bromoform	ND		0.0050	0.0024	mg/Kg			03/21/23 05:49	1
Bromomethane	ND		0.0050	0.0042	mg/Kg			03/21/23 05:49	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg			03/21/23 05:49	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg			03/21/23 05:49	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg			03/21/23 05:49	1
Chloroethane	ND		0.0050	0.0027	mg/Kg			03/21/23 05:49	1
Chloroform	ND		0.0050	0.00079	mg/Kg			03/21/23 05:49	1
Chloromethane	ND		0.0050	0.0023	mg/Kg			03/21/23 05:49	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg			03/21/23 05:49	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg			03/21/23 05:49	1
Cyclohexane	ND		0.010	0.0014	mg/Kg			03/21/23 05:49	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg			03/21/23 05:49	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg			03/21/23 05:49	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg			03/21/23 05:49	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg			03/21/23 05:49	1
Methyl acetate	ND		0.025	0.0034	mg/Kg			03/21/23 05:49	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg			03/21/23 05:49	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg			03/21/23 05:49	1
Methylene Chloride	ND		0.025	0.012	mg/Kg			03/21/23 05:49	1
Styrene	ND		0.0050	0.0012	mg/Kg			03/21/23 05:49	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg			03/21/23 05:49	1
Toluene	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg			03/21/23 05:49	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg			03/21/23 05:49	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg			03/21/23 05:49	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg			03/21/23 05:49	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg			03/21/23 05:49	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566133/7
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	79		56 - 125		03/21/23 05:49	1
Dibromofluoromethane (Surr)	78		41 - 138		03/21/23 05:49	1
4-Bromofluorobenzene (Surr)	71		41 - 143		03/21/23 05:49	1
1,2-Dichloroethane-d4 (Surr)	82		58 - 125		03/21/23 05:49	1

Lab Sample ID: LCS 240-566133/6
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0308		mg/Kg		123	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0292		mg/Kg		117	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0343		mg/Kg		137	64 - 148
1,1,2-Trichloroethane	0.0250	0.0305	*+	mg/Kg		122	79 - 120
1,1-Dichloroethane	0.0250	0.0294		mg/Kg		118	74 - 121
1,1-Dichloroethene	0.0250	0.0313		mg/Kg		125	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0255		mg/Kg		102	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0229		mg/Kg		91	52 - 133
Ethylene Dibromide	0.0250	0.0296		mg/Kg		118	80 - 121
1,2-Dichlorobenzene	0.0250	0.0285		mg/Kg		114	73 - 120
1,2-Dichloroethane	0.0250	0.0295		mg/Kg		118	71 - 123
1,2-Dichloropropane	0.0250	0.0292		mg/Kg		117	76 - 126
1,3-Dichlorobenzene	0.0250	0.0286		mg/Kg		114	73 - 120
1,4-Dichlorobenzene	0.0250	0.0281		mg/Kg		113	74 - 120
2-Butanone (MEK)	0.0500	0.0655		mg/Kg		131	63 - 142
2-Hexanone	0.0500	0.0572		mg/Kg		114	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0550		mg/Kg		110	62 - 142
Acetone	0.0500	0.0801		mg/Kg		160	58 - 160
Benzene	0.0250	0.0298		mg/Kg		119	76 - 121
Dichlorobromomethane	0.0250	0.0294		mg/Kg		118	71 - 138
Bromoform	0.0250	0.0255		mg/Kg		102	57 - 140
Bromomethane	0.0250	0.0280		mg/Kg		112	10 - 171
Carbon disulfide	0.0250	0.0288		mg/Kg		115	43 - 152
Carbon tetrachloride	0.0250	0.0312		mg/Kg		125	64 - 144
Chlorobenzene	0.0250	0.0285		mg/Kg		114	80 - 120
Chloroethane	0.0250	0.0250		mg/Kg		100	11 - 164
Chloroform	0.0250	0.0298		mg/Kg		119	78 - 120
Chloromethane	0.0250	0.0205		mg/Kg		82	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0285		mg/Kg		114	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0265		mg/Kg		106	70 - 133
Cyclohexane	0.0250	0.0329		mg/Kg		132	65 - 137
Chlorodibromomethane	0.0250	0.0276		mg/Kg		111	68 - 131
Dichlorodifluoromethane	0.0250	0.0200		mg/Kg		80	21 - 150
Ethylbenzene	0.0250	0.0297		mg/Kg		119	80 - 120
Isopropylbenzene	0.0250	0.0311		mg/Kg		124	80 - 130
Methyl acetate	0.0500	0.0522		mg/Kg		104	60 - 133
Methyl tert-butyl ether	0.0250	0.0268		mg/Kg		107	70 - 130
Methylcyclohexane	0.0250	0.0314		mg/Kg		126	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566133/6
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0239	J	mg/Kg		96	71 - 124
Styrene	0.0250	0.0318		mg/Kg		127	75 - 140
Tetrachloroethene	0.0250	0.0305		mg/Kg		122	76 - 127
Toluene	0.0250	0.0304	*+	mg/Kg		122	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0311		mg/Kg		124	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0258		mg/Kg		103	61 - 121
Trichloroethene	0.0250	0.0296		mg/Kg		119	74 - 130
Trichlorofluoromethane	0.0250	0.0292		mg/Kg		117	50 - 154
Vinyl chloride	0.0250	0.0273		mg/Kg		109	49 - 146
Xylenes, Total	0.0500	0.0613	*+	mg/Kg		123	80 - 122
m-Xylene & p-Xylene	0.0250	0.0302		mg/Kg		121	80 - 122
o-Xylene	0.0250	0.0311		mg/Kg		124	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	91		56 - 125
Dibromofluoromethane (Surr)	88		41 - 138
4-Bromofluorobenzene (Surr)	86		41 - 143
1,2-Dichloroethane-d4 (Surr)	88		58 - 125

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0278		mg/Kg		111	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0277		mg/Kg		111	66 - 129
1,1,1,2-Trichloro-1,1,2-trifluoroethane	0.0250	0.0241		mg/Kg		96	64 - 148
1,1,2-Trichloroethane	0.0250	0.0271		mg/Kg		109	79 - 120
1,1-Dichloroethane	0.0250	0.0243		mg/Kg		97	74 - 121
1,1-Dichloroethene	0.0250	0.0263		mg/Kg		105	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0251		mg/Kg		101	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0246		mg/Kg		98	52 - 133
Ethylene Dibromide	0.0250	0.0261		mg/Kg		105	80 - 121
1,2-Dichlorobenzene	0.0250	0.0261		mg/Kg		104	73 - 120
1,2-Dichloroethane	0.0250	0.0259		mg/Kg		104	71 - 123
1,2-Dichloropropane	0.0250	0.0243		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	0.0250	0.0262		mg/Kg		105	73 - 120
1,4-Dichlorobenzene	0.0250	0.0264		mg/Kg		106	74 - 120
2-Butanone (MEK)	0.0500	0.0524		mg/Kg		105	63 - 142
2-Hexanone	0.0500	0.0552		mg/Kg		110	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0537		mg/Kg		107	62 - 142
Acetone	0.0500	0.0703		mg/Kg		141	58 - 160
Benzene	0.0250	0.0256		mg/Kg		102	76 - 121
Dichlorobromomethane	0.0250	0.0252		mg/Kg		101	71 - 138
Bromoform	0.0250	0.0232		mg/Kg		93	57 - 140
Bromomethane	0.0250	0.0252		mg/Kg		101	10 - 171
Carbon disulfide	0.0250	0.0248		mg/Kg		99	43 - 152
Carbon tetrachloride	0.0250	0.0278		mg/Kg		111	64 - 144

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene	0.0250	0.0258		mg/Kg		103	80 - 120
Chloroethane	0.0250	0.0223		mg/Kg		89	11 - 164
Chloroform	0.0250	0.0268		mg/Kg		107	78 - 120
Chloromethane	0.0250	0.0216		mg/Kg		86	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0258		mg/Kg		103	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0246		mg/Kg		99	70 - 133
Cyclohexane	0.0250	0.0243		mg/Kg		97	65 - 137
Chlorodibromomethane	0.0250	0.0252		mg/Kg		101	68 - 131
Dichlorodifluoromethane	0.0250	0.0278		mg/Kg		111	21 - 150
Ethylbenzene	0.0250	0.0264		mg/Kg		105	80 - 120
Isopropylbenzene	0.0250	0.0271		mg/Kg		108	80 - 130
Methyl acetate	0.0500	0.0451		mg/Kg		90	60 - 133
Methyl tert-butyl ether	0.0250	0.0249		mg/Kg		99	70 - 130
Methylcyclohexane	0.0250	0.0248		mg/Kg		99	70 - 138
Methylene Chloride	0.0250	0.0262		mg/Kg		105	71 - 124
Styrene	0.0250	0.0267		mg/Kg		107	75 - 140
Tetrachloroethene	0.0250	0.0267		mg/Kg		107	76 - 127
Toluene	0.0250	0.0269		mg/Kg		108	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0248		mg/Kg		99	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0269		mg/Kg		108	61 - 121
Trichloroethene	0.0250	0.0247		mg/Kg		99	74 - 130
Trichlorofluoromethane	0.0250	0.0263		mg/Kg		105	50 - 154
Vinyl chloride	0.0250	0.0230		mg/Kg		92	49 - 146
Xylenes, Total	0.0500	0.0522		mg/Kg		104	80 - 122
m-Xylene & p-Xylene	0.0250	0.0262		mg/Kg		105	80 - 122
o-Xylene	0.0250	0.0260		mg/Kg		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	113		56 - 125
Dibromofluoromethane (Surr)	105		41 - 138
4-Bromofluorobenzene (Surr)	113		41 - 143
1,2-Dichloroethane-d4 (Surr)	110		58 - 125

Lab Sample ID: LCS 240-566367/10
Matrix: Solid
Analysis Batch: 566367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	0.935		mg/L		94	74 - 127
1,2-Dichloroethane	1.00	1.01		mg/L		101	72 - 120
2-Butanone (MEK)	2.00	2.22		mg/L		111	68 - 130
Benzene	1.00	0.975		mg/L		98	80 - 121
Carbon tetrachloride	1.00	0.895		mg/L		89	69 - 120
Chlorobenzene	1.00	0.937		mg/L		94	80 - 120
Chloroform	1.00	0.969		mg/L		97	75 - 120
Tetrachloroethene	1.00	0.910		mg/L		91	74 - 120
Trichloroethene	1.00	0.892		mg/L		89	75 - 120
Vinyl chloride	1.00	0.801		mg/L		80	53 - 147

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566367/10
Matrix: Solid
Analysis Batch: 566367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	92		71 - 121
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		76 - 120

Lab Sample ID: MB 240-566719/1-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566719

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Acetone	ND		1.0	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Benzene	ND		0.25	0.042	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Bromoform	ND		0.25	0.23	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloroform	ND		0.25	0.054	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/24/23 22:04	03/25/23 12:01	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566719/1-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566719

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Styrene	ND		0.25	0.052	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Toluene	ND		0.25	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/24/23 22:04	03/25/23 12:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	80		56 - 125	03/24/23 22:04	03/25/23 12:01	1
Dibromofluoromethane (Surr)	80		41 - 138	03/24/23 22:04	03/25/23 12:01	1
4-Bromofluorobenzene (Surr)	62		41 - 143	03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	03/24/23 22:04	03/25/23 12:01	1

Lab Sample ID: LCS 240-566719/2-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.20		mg/Kg		96	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.28		mg/Kg		102	64 - 148
1,1,2-Trichloroethane	1.25	1.33		mg/Kg		106	79 - 120
1,1-Dichloroethane	1.25	1.08		mg/Kg		86	74 - 121
1,1-Dichloroethene	1.25	1.11		mg/Kg		89	68 - 141
1,2,4-Trichlorobenzene	1.25	0.903		mg/Kg		72	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.803		mg/Kg		64	52 - 133
Ethylene Dibromide	1.25	1.21		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	1.25	1.15		mg/Kg		92	73 - 120
1,2-Dichloroethane	1.25	1.25		mg/Kg		100	71 - 123
1,2-Dichloropropane	1.25	1.15		mg/Kg		92	76 - 126
1,3-Dichlorobenzene	1.25	1.10		mg/Kg		88	73 - 120
1,4-Dichlorobenzene	1.25	1.11		mg/Kg		89	74 - 120
2-Butanone (MEK)	2.50	2.65		mg/Kg		106	63 - 142
2-Hexanone	2.50	2.11		mg/Kg		85	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.04		mg/Kg		82	62 - 142
Acetone	2.50	2.79		mg/Kg		111	58 - 160
Benzene	1.25	1.21		mg/Kg		97	76 - 121
Dichlorobromomethane	1.25	1.10		mg/Kg		88	71 - 138
Bromoform	1.25	0.994		mg/Kg		80	57 - 140
Bromomethane	1.25	0.699		mg/Kg		56	10 - 171
Carbon disulfide	1.25	0.815		mg/Kg		65	43 - 152
Carbon tetrachloride	1.25	1.21		mg/Kg		97	64 - 144
Chlorobenzene	1.25	1.20		mg/Kg		96	80 - 120
Chloroethane	1.25	0.859		mg/Kg		69	11 - 164

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566719/2-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroform	1.25	1.24		mg/Kg		100	78 - 120
Chloromethane	1.25	0.596		mg/Kg		48	41 - 142
cis-1,2-Dichloroethene	1.25	1.18		mg/Kg		94	78 - 124
cis-1,3-Dichloropropene	1.25	0.947		mg/Kg		76	70 - 133
Cyclohexane	1.25	1.06		mg/Kg		85	65 - 137
Chlorodibromomethane	1.25	1.02		mg/Kg		82	68 - 131
Dichlorodifluoromethane	1.25	0.636		mg/Kg		51	21 - 150
Ethylbenzene	1.25	1.22		mg/Kg		97	80 - 120
Isopropylbenzene	1.25	1.21		mg/Kg		97	80 - 130
Methyl acetate	2.50	2.31		mg/Kg		93	60 - 133
Methyl tert-butyl ether	1.25	1.10		mg/Kg		88	70 - 130
Methylcyclohexane	1.25	1.14		mg/Kg		91	70 - 138
Methylene Chloride	1.25	0.924		mg/Kg		74	71 - 124
Styrene	1.25	1.29		mg/Kg		103	75 - 140
Tetrachloroethene	1.25	1.25		mg/Kg		100	76 - 127
Toluene	1.25	1.24		mg/Kg		100	80 - 120
trans-1,2-Dichloroethene	1.25	1.14		mg/Kg		92	76 - 130
trans-1,3-Dichloropropene	1.25	0.946		mg/Kg		76	61 - 121
Trichloroethene	1.25	1.21		mg/Kg		97	74 - 130
Trichlorofluoromethane	1.25	0.961		mg/Kg		77	50 - 154
Vinyl chloride	1.25	0.769		mg/Kg		62	49 - 146
Xylenes, Total	2.50	2.52		mg/Kg		101	80 - 122
m-Xylene & p-Xylene	1.25	1.22		mg/Kg		98	80 - 122
o-Xylene	1.25	1.30		mg/Kg		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	82		56 - 125
Dibromofluoromethane (Surr)	79		41 - 138
4-Bromofluorobenzene (Surr)	75		41 - 143
1,2-Dichloroethane-d4 (Surr)	79		58 - 125

Lab Sample ID: 240-182202-22 MS
Matrix: Solid
Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		44.9	46.6		mg/Kg		104	46 - 144
1,1,2,2-Tetrachloroethane	ND		44.9	42.1		mg/Kg		94	26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		44.9	47.9		mg/Kg		107	35 - 164
1,1,2-Trichloroethane	ND		44.9	46.2		mg/Kg		103	26 - 149
1,1-Dichloroethane	ND		44.9	41.1		mg/Kg		92	46 - 135
1,1-Dichloroethene	ND		44.9	43.0		mg/Kg		96	44 - 160
1,2,4-Trichlorobenzene	ND		44.9	37.8		mg/Kg		84	10 - 120
1,2-Dibromo-3-Chloropropane	ND		44.9	27.5		mg/Kg		61	12 - 144
Ethylene Dibromide	ND		44.9	43.7		mg/Kg		97	31 - 142
1,2-Dichlorobenzene	ND		44.9	43.6		mg/Kg		97	10 - 126
1,2-Dichloroethane	ND		44.9	44.6		mg/Kg		99	40 - 132
1,2-Dichloropropane	ND		44.9	40.6		mg/Kg		90	45 - 133

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MS

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
1,3-Dichlorobenzene	ND		44.9	43.6		mg/Kg		97	10 - 131
1,4-Dichlorobenzene	ND		44.9	42.0		mg/Kg		94	10 - 129
2-Butanone (MEK)	ND		89.8	87.1		mg/Kg		97	30 - 157
2-Hexanone	ND		89.8	74.6		mg/Kg		83	20 - 166
4-Methyl-2-pentanone (MIBK)	ND		89.8	69.3		mg/Kg		77	31 - 159
Acetone	ND		89.8	99.1		mg/Kg		110	35 - 167
Benzene	ND		44.9	44.5		mg/Kg		99	39 - 134
Dichlorobromomethane	ND		44.9	42.9		mg/Kg		96	32 - 146
Bromoform	ND		44.9	36.5		mg/Kg		81	12 - 144
Bromomethane	ND		44.9	40.7		mg/Kg		91	10 - 161
Carbon disulfide	ND		44.9	36.9		mg/Kg		82	24 - 153
Carbon tetrachloride	ND		44.9	46.9		mg/Kg		105	37 - 145
Chlorobenzene	ND		44.9	44.3		mg/Kg		99	18 - 134
Chloroethane	ND		44.9	35.0		mg/Kg		78	14 - 159
Chloroform	ND		44.9	45.6		mg/Kg		102	43 - 134
Chloromethane	ND		44.9	24.5		mg/Kg		55	32 - 151
cis-1,2-Dichloroethene	ND		44.9	44.1		mg/Kg		98	48 - 132
cis-1,3-Dichloropropene	ND		44.9	35.8		mg/Kg		80	23 - 139
Cyclohexane	ND		44.9	39.4		mg/Kg		88	31 - 147
Chlorodibromomethane	ND		44.9	39.8		mg/Kg		89	25 - 143
Dichlorodifluoromethane	ND		44.9	31.7		mg/Kg		70	16 - 157
Ethylbenzene	ND		44.9	45.3		mg/Kg		101	17 - 137
Isopropylbenzene	ND		44.9	46.0		mg/Kg		102	10 - 146
Methyl acetate	ND		89.8	76.9		mg/Kg		86	13 - 164
Methyl tert-butyl ether	ND		44.9	38.9		mg/Kg		87	55 - 134
Methylcyclohexane	ND		44.9	41.9		mg/Kg		93	20 - 153
Methylene Chloride	ND		44.9	36.6		mg/Kg		81	38 - 145
Styrene	ND		44.9	47.3		mg/Kg		105	10 - 149
Tetrachloroethene	ND		44.9	47.1		mg/Kg		105	19 - 147
Toluene	ND		44.9	45.3		mg/Kg		101	30 - 137
trans-1,2-Dichloroethene	ND		44.9	44.0		mg/Kg		98	41 - 145
trans-1,3-Dichloropropene	ND		44.9	34.6		mg/Kg		77	19 - 130
Trichloroethene	ND		44.9	44.2		mg/Kg		98	21 - 158
Trichlorofluoromethane	ND		44.9	42.6		mg/Kg		95	36 - 161
Vinyl chloride	ND		44.9	34.0		mg/Kg		76	32 - 163
Xylenes, Total	ND		89.8	93.9		mg/Kg		105	17 - 138
m-Xylene & p-Xylene	ND		44.9	45.6		mg/Kg		102	10 - 141
o-Xylene	ND		44.9	48.3		mg/Kg		108	18 - 139

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	83		41 - 138
4-Bromofluorobenzene (Surr)	76		41 - 143
1,2-Dichloroethane-d4 (Surr)	80		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MSD

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1,1-Trichloroethane	ND		44.9	38.0		mg/Kg		85	46 - 144	20	37
1,1,2,2-Tetrachloroethane	ND		44.9	38.9		mg/Kg		87	26 - 159	8	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		44.9	40.8		mg/Kg		91	35 - 164	16	37
1,1,2-Trichloroethane	ND		44.9	40.5		mg/Kg		90	26 - 149	13	40
1,1-Dichloroethane	ND		44.9	37.2		mg/Kg		83	46 - 135	10	36
1,1-Dichloroethene	ND		44.9	39.7		mg/Kg		88	44 - 160	8	37
1,2,4-Trichlorobenzene	ND		44.9	31.5		mg/Kg		70	10 - 120	18	40
1,2-Dibromo-3-Chloropropane	ND		44.9	21.5		mg/Kg		48	12 - 144	24	40
Ethylene Dibromide	ND		44.9	38.3		mg/Kg		85	31 - 142	13	40
1,2-Dichlorobenzene	ND		44.9	33.9		mg/Kg		75	10 - 126	25	40
1,2-Dichloroethane	ND		44.9	39.5		mg/Kg		88	40 - 132	12	35
1,2-Dichloropropane	ND		44.9	37.6		mg/Kg		84	45 - 133	8	37
1,3-Dichlorobenzene	ND		44.9	36.8		mg/Kg		82	10 - 131	17	40
1,4-Dichlorobenzene	ND		44.9	36.1		mg/Kg		80	10 - 129	15	40
2-Butanone (MEK)	ND		89.8	91.3		mg/Kg		102	30 - 157	5	40
2-Hexanone	ND		89.8	79.5		mg/Kg		89	20 - 166	6	40
4-Methyl-2-pentanone (MIBK)	ND		89.8	71.8		mg/Kg		80	31 - 159	3	40
Acetone	ND		89.8	110		mg/Kg		123	35 - 167	11	40
Benzene	ND		44.9	38.5		mg/Kg		86	39 - 134	14	40
Dichlorobromomethane	ND		44.9	35.7		mg/Kg		80	32 - 146	18	39
Bromoform	ND		44.9	30.9		mg/Kg		69	12 - 144	16	40
Bromomethane	ND		44.9	40.4		mg/Kg		90	10 - 161	1	40
Carbon disulfide	ND		44.9	33.9		mg/Kg		76	24 - 153	8	40
Carbon tetrachloride	ND		44.9	37.6		mg/Kg		84	37 - 145	22	38
Chlorobenzene	ND		44.9	36.9		mg/Kg		82	18 - 134	18	40
Chloroethane	ND		44.9	34.3		mg/Kg		76	14 - 159	2	40
Chloroform	ND		44.9	40.3		mg/Kg		90	43 - 134	12	36
Chloromethane	ND		44.9	27.5		mg/Kg		61	32 - 151	12	38
cis-1,2-Dichloroethene	ND		44.9	37.9		mg/Kg		84	48 - 132	15	37
cis-1,3-Dichloropropene	ND		44.9	30.6		mg/Kg		68	23 - 139	16	39
Cyclohexane	ND		44.9	35.9		mg/Kg		80	31 - 147	10	39
Chlorodibromomethane	ND		44.9	32.7		mg/Kg		73	25 - 143	20	40
Dichlorodifluoromethane	ND		44.9	27.5		mg/Kg		61	16 - 157	14	40
Ethylbenzene	ND		44.9	37.0		mg/Kg		82	17 - 137	20	40
Isopropylbenzene	ND		44.9	39.3		mg/Kg		87	10 - 146	16	40
Methyl acetate	ND		89.8	85.4		mg/Kg		95	13 - 164	11	40
Methyl tert-butyl ether	ND		44.9	37.0		mg/Kg		82	55 - 134	5	37
Methylcyclohexane	ND		44.9	33.9		mg/Kg		75	20 - 153	21	40
Methylene Chloride	ND		44.9	32.9		mg/Kg		73	38 - 145	11	40
Styrene	ND		44.9	40.3		mg/Kg		90	10 - 149	16	40
Tetrachloroethene	ND		44.9	37.0		mg/Kg		82	19 - 147	24	40
Toluene	ND		44.9	38.7		mg/Kg		86	30 - 137	16	40
trans-1,2-Dichloroethene	ND		44.9	37.7		mg/Kg		84	41 - 145	15	37
trans-1,3-Dichloropropene	ND		44.9	31.0		mg/Kg		69	19 - 130	11	40
Trichloroethene	ND		44.9	37.1		mg/Kg		83	21 - 158	18	40
Trichlorofluoromethane	ND		44.9	39.5		mg/Kg		88	36 - 161	7	40
Vinyl chloride	ND		44.9	34.8		mg/Kg		77	32 - 163	2	38
Xylenes, Total	ND		89.8	77.9		mg/Kg		87	17 - 138	19	40

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MSD

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	ND		44.9	37.3		mg/Kg		83	10 - 141	20	40
o-Xylene	ND		44.9	40.6		mg/Kg		90	18 - 139	17	40
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	83		56 - 125								
Dibromofluoromethane (Surr)	80		41 - 138								
4-Bromofluorobenzene (Surr)	77		41 - 143								
1,2-Dichloroethane-d4 (Surr)	81		58 - 125								

Lab Sample ID: LB 240-566129/1-A MB

Matrix: Solid

Analysis Batch: 566367

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 15:29	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 15:29	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 15:29	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 15:29	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 15:29	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 15:29	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 15:29	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 15:29	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 15:29	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 15:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	89		80 - 120				03/22/23 15:29	1	
Dibromofluoromethane (Surr)	93		71 - 121				03/22/23 15:29	1	
4-Bromofluorobenzene (Surr)	100		80 - 120				03/22/23 15:29	1	
1,2-Dichloroethane-d4 (Surr)	98		76 - 120				03/22/23 15:29	1	

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566221/8-A

Matrix: Solid

Analysis Batch: 566449

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 566221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 10:08	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 10:08	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 10:08	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 10:08	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566221/8-A
Matrix: Solid
Analysis Batch: 566449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566221

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 10:08	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 10:08	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	121		46 - 137	03/21/23 12:03	03/23/23 10:08	1
Phenol-d5 (Surr)	65		26 - 120	03/21/23 12:03	03/23/23 10:08	1
Nitrobenzene-d5 (Surr)	81		24 - 120	03/21/23 12:03	03/23/23 10:08	1
2-Fluorophenol (Surr)	73		19 - 120	03/21/23 12:03	03/23/23 10:08	1
2-Fluorobiphenyl (Surr)	93		33 - 120	03/21/23 12:03	03/23/23 10:08	1
2,4,6-Tribromophenol (Surr)	116		10 - 120	03/21/23 12:03	03/23/23 10:08	1

Lab Sample ID: LCS 240-566221/9-A
Matrix: Solid
Analysis Batch: 566449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566221

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0599		mg/L		75	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0768		mg/L		96	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0796		mg/L		100	51 - 120
2,4-Dinitrotoluene	0.0800	0.0759		mg/L		95	58 - 125
Pyridine	0.160	0.0696		mg/L		44	10 - 120
2-Methylphenol	0.0800	0.0606		mg/L		76	45 - 120
Hexachlorobenzene	0.0800	0.0810		mg/L		101	55 - 120
Hexachlorobutadiene	0.0800	0.0662		mg/L		83	41 - 120
Hexachloroethane	0.0800	0.0601		mg/L		75	39 - 120
Nitrobenzene	0.0800	0.0634		mg/L		79	47 - 120
Pentachlorophenol	0.160	0.129		mg/L		81	19 - 132
3 & 4 Methylphenol	0.0800	0.0615		mg/L		77	40 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	112		46 - 137
Phenol-d5 (Surr)	68		26 - 120
Nitrobenzene-d5 (Surr)	84		24 - 120
2-Fluorophenol (Surr)	76		19 - 120
2-Fluorobiphenyl (Surr)	94		33 - 120
2,4,6-Tribromophenol (Surr)	123	S1+	10 - 120

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Atrazine	ND		0.20	0.036	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Carbazole	ND		0.050	0.019	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Phenol	ND		0.050	0.0080	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	103		46 - 137	03/22/23 08:13	03/24/23 08:51	1
Phenol-d5 (Surr)	36		26 - 120	03/22/23 08:13	03/24/23 08:51	1
Nitrobenzene-d5 (Surr)	33		25 - 120	03/22/23 08:13	03/24/23 08:51	1
2-Fluorophenol (Surr)	33		20 - 120	03/22/23 08:13	03/24/23 08:51	1
2-Fluorobiphenyl (Surr)	40		34 - 120	03/22/23 08:13	03/24/23 08:51	1
2,4,6-Tribromophenol (Surr)	33		10 - 120	03/22/23 08:13	03/24/23 08:51	1

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1'-Biphenyl	0.667	0.371		mg/Kg		56	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.327		mg/Kg		49	38 - 120
2,4,5-Trichlorophenol	0.667	0.502		mg/Kg		75	50 - 120
2,4,6-Trichlorophenol	0.667	0.476		mg/Kg		71	50 - 120
2,4-Dichlorophenol	0.667	0.398		mg/Kg		60	50 - 120
2,4-Dimethylphenol	0.667	0.392		mg/Kg		59	24 - 120
2,4-Dinitrophenol	1.33	1.09		mg/Kg		82	19 - 132
2,4-Dinitrotoluene	0.667	0.679		mg/Kg		102	64 - 120
2,6-Dinitrotoluene	0.667	0.603		mg/Kg		90	62 - 120
2-Chloronaphthalene	0.667	0.377		mg/Kg		57	51 - 120
2-Chlorophenol	0.667	0.373		mg/Kg		56	47 - 120
2-Methylnaphthalene	0.667	0.359		mg/Kg		54	38 - 120
2-Methylphenol	0.667	0.347		mg/Kg		52	45 - 120
2-Nitroaniline	0.667	0.523		mg/Kg		79	57 - 120
2-Nitrophenol	0.667	0.424		mg/Kg		64	51 - 120
3,3'-Dichlorobenzidine	1.33	1.46		mg/Kg		110	27 - 199
3-Nitroaniline	0.667	0.555		mg/Kg		83	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.26		mg/Kg		95	46 - 126
4-Bromophenyl phenyl ether	0.667	0.558		mg/Kg		84	65 - 120
4-Chloro-3-methylphenol	0.667	0.458		mg/Kg		69	51 - 120
4-Chloroaniline	0.667	0.350		mg/Kg		52	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.470		mg/Kg		70	59 - 120
4-Nitroaniline	0.667	0.650		mg/Kg		97	48 - 128
4-Nitrophenol	1.33	1.27		mg/Kg		96	43 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	0.667	0.394		mg/Kg		59	52 - 120
Acenaphthylene	0.667	0.391		mg/Kg		59	52 - 120
Acetophenone	0.667	0.363		mg/Kg		54	47 - 120
Anthracene	0.667	0.599		mg/Kg		90	64 - 120
Atrazine	1.33	1.35		mg/Kg		102	71 - 125
Benzaldehyde	1.33	0.648		mg/Kg		49	42 - 120
Benzo[a]anthracene	0.667	0.726		mg/Kg		109	70 - 120
Benzo[a]pyrene	0.667	0.608		mg/Kg		91	63 - 125
Benzo[b]fluoranthene	0.667	0.567		mg/Kg		85	64 - 121
Benzo[g,h,i]perylene	0.667	0.662		mg/Kg		99	62 - 120
Benzo[k]fluoranthene	0.667	0.615		mg/Kg		92	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.349		mg/Kg		52	50 - 120
Bis(2-chloroethyl)ether	0.667	0.289		mg/Kg		43	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.664		mg/Kg		100	63 - 133
Butyl benzyl phthalate	0.667	0.679		mg/Kg		102	66 - 127
Caprolactam	1.33	1.18		mg/Kg		89	67 - 120
Carbazole	0.667	0.676		mg/Kg		101	61 - 129
Chrysene	0.667	0.683		mg/Kg		102	67 - 120
Dibenz(a,h)anthracene	0.667	0.630		mg/Kg		95	62 - 120
Dibenzofuran	0.667	0.426		mg/Kg		64	55 - 120
Diethyl phthalate	0.667	0.613		mg/Kg		92	61 - 120
Dimethyl phthalate	0.667	0.571		mg/Kg		86	64 - 120
Di-n-butyl phthalate	0.667	0.650		mg/Kg		97	70 - 129
Di-n-octyl phthalate	0.667	0.609		mg/Kg		91	64 - 129
Fluoranthene	0.667	0.699		mg/Kg		105	71 - 124
Fluorene	0.667	0.470		mg/Kg		70	58 - 120
Hexachlorobenzene	0.667	0.618		mg/Kg		93	59 - 120
Hexachlorobutadiene	0.667	0.359		mg/Kg		54	45 - 120
Hexachlorocyclopentadiene	0.667	0.239	J	mg/Kg		36	10 - 120
Hexachloroethane	0.667	0.308		mg/Kg		46	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.669		mg/Kg		100	65 - 122
Isophorone	0.667	0.348		mg/Kg		52	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.352		mg/Kg		53	48 - 120
N-Nitrosodiphenylamine	0.667	0.542		mg/Kg		81	64 - 120
Naphthalene	0.667	0.338		mg/Kg		51	34 - 120
Nitrobenzene	0.667	0.355		mg/Kg		53	48 - 120
Pentachlorophenol	1.33	0.815		mg/Kg		61	10 - 120
Phenanthrene	0.667	0.566		mg/Kg		85	60 - 120
Phenol	0.667	0.349		mg/Kg		52	48 - 120
Pyrene	0.667	0.721		mg/Kg		108	67 - 120
3 & 4 Methylphenol	0.667	0.365	J	mg/Kg		55	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	124		46 - 137
Phenol-d5 (Surr)	59		26 - 120
Nitrobenzene-d5 (Surr)	55		25 - 120
2-Fluorophenol (Surr)	60		20 - 120
2-Fluorobiphenyl (Surr)	63		34 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	112		10 - 120

Lab Sample ID: 240-182202-1 MS
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
1,1'-Biphenyl	ND		0.800	ND		mg/Kg	⊛	NC	29 - 120
bis (2-chloroisopropyl) ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	10 - 120
2,4,5-Trichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	35 - 120
2,4,6-Trichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	18 - 120
2,4-Dichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	21 - 120
2,4-Dimethylphenol	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120
2,4-Dinitrophenol	ND		1.60	ND		mg/Kg	⊛	NC	10 - 126
2,4-Dinitrotoluene	ND		0.800	ND		mg/Kg	⊛	NC	46 - 120
2,6-Dinitrotoluene	ND		0.800	ND		mg/Kg	⊛	NC	44 - 120
2-Chloronaphthalene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	33 - 120
2-Chlorophenol	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	19 - 120
2-Methylnaphthalene	0.32	J	0.800	0.476	J	mg/Kg	⊛	19	13 - 122
2-Methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	12 - 120
2-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	36 - 122
2-Nitrophenol	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	28 - 120
3,3'-Dichlorobenzidine	ND		1.60	2.94	J	mg/Kg	⊛	NC	10 - 179
3-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	10 - 123
4,6-Dinitro-2-methylphenol	ND		1.60	ND		mg/Kg	⊛	NC	11 - 120
4-Bromophenyl phenyl ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	49 - 120
4-Chloro-3-methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	35 - 120
4-Chloroaniline	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120
4-Chlorophenyl phenyl ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	45 - 120
4-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	13 - 129
4-Nitrophenol	ND		1.60	ND		mg/Kg	⊛	NC	28 - 123
Acenaphthene	ND		0.800	0.537	J	mg/Kg	⊛	67	33 - 120
Acenaphthylene	ND		0.800	0.472	J	mg/Kg	⊛	59	39 - 120
Acetophenone	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	11 - 120
Anthracene	ND		0.800	0.522	J	mg/Kg	⊛	65	30 - 127
Atrazine	ND		1.60	ND		mg/Kg	⊛	NC	52 - 126
Benzaldehyde	ND	F1	1.60	ND	F1	mg/Kg	⊛	0	13 - 120
Benzo[a]anthracene	0.18	J	0.800	0.580	J	mg/Kg	⊛	50	24 - 137
Benzo[a]pyrene	ND		0.800	0.585	J	mg/Kg	⊛	73	28 - 136
Benzo[b]fluoranthene	0.38	J	0.800	0.649	J	mg/Kg	⊛	33	21 - 142
Benzo[g,h,i]perylene	ND		0.800	0.658	J	mg/Kg	⊛	82	10 - 144
Benzo[k]fluoranthene	ND		0.800	0.604	J	mg/Kg	⊛	75	36 - 135
Bis(2-chloroethoxy)methane	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	25 - 120
Bis(2-chloroethyl)ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.800	ND		mg/Kg	⊛	NC	37 - 143
Butyl benzyl phthalate	ND		0.800	1.36	J	mg/Kg	⊛	NC	49 - 130
Caprolactam	ND		1.60	ND		mg/Kg	⊛	NC	37 - 127
Carbazole	ND		0.800	ND		mg/Kg	⊛	NC	33 - 132

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MS

Matrix: Solid

Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Prep Type: Total/NA

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Added	Result					
Chrysene	0.16	J	0.800	0.586	J	mg/Kg	⊛	53	28 - 129	
Dibenz(a,h)anthracene	ND		0.800	0.631	J	mg/Kg	⊛	79	10 - 132	
Dibenzofuran	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	33 - 120	
Diethyl phthalate	ND		0.800	ND		mg/Kg	⊛	NC	48 - 120	
Dimethyl phthalate	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	45 - 120	
Di-n-butyl phthalate	ND		0.800	ND		mg/Kg	⊛	NC	40 - 137	
Di-n-octyl phthalate	ND		0.800	1.95	J	mg/Kg	⊛	NC	34 - 152	
Fluoranthene	0.21	J	0.800	0.564	J	mg/Kg	⊛	70	31 - 140	
Fluorene	ND		0.800	0.558	J	mg/Kg	⊛	70	43 - 120	
Hexachlorobenzene	ND		0.800	0.608	J	mg/Kg	⊛	76	44 - 120	
Hexachlorobutadiene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	13 - 120	
Hexachlorocyclopentadiene	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120	
Hexachloroethane	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	10 - 120	
Indeno[1,2,3-cd]pyrene	ND		0.800	0.716	J	mg/Kg	⊛	89	10 - 139	
Isophorone	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	27 - 120	
N-Nitrosodi-n-propylamine	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	23 - 120	
N-Nitrosodiphenylamine	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	30 - 128	
Naphthalene	0.26	J	0.800	0.451	J	mg/Kg	⊛	24	10 - 120	
Nitrobenzene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	19 - 120	
Pentachlorophenol	ND		1.60	ND		mg/Kg	⊛	NC	10 - 120	
Phenanthrene	0.51	J F1	0.800	0.633	J F1	mg/Kg	⊛	15	36 - 120	
Phenol	ND		0.800	0.459	J	mg/Kg	⊛	57	10 - 120	
Pyrene	0.22	J	0.800	0.602	J	mg/Kg	⊛	48	31 - 134	
3 & 4 Methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	10 - 122	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	88		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	53		25 - 120
2-Fluorophenol (Surr)	62		20 - 120
2-Fluorobiphenyl (Surr)	73		34 - 120
2,4,6-Tribromophenol (Surr)	52		10 - 120

Lab Sample ID: 240-182202-1 MSD

Matrix: Solid

Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Prep Type: Total/NA

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier		Added	Result						Qualifier	Limit
1,1'-Biphenyl	ND		0.791	ND		mg/Kg	⊛	NC	29 - 120	NC	45	
bis (2-chloroisopropyl) ether	ND	F1	0.791	ND	F1	mg/Kg	⊛	0	10 - 120	NC	45	
2,4,5-Trichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	35 - 120	NC	39	
2,4,6-Trichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	18 - 120	NC	45	
2,4-Dichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	21 - 120	NC	44	
2,4-Dimethylphenol	ND		0.791	ND		mg/Kg	⊛	NC	10 - 120	NC	45	
2,4-Dinitrophenol	ND		1.58	ND		mg/Kg	⊛	NC	10 - 126	NC	45	
2,4-Dinitrotoluene	ND		0.791	ND		mg/Kg	⊛	NC	46 - 120	NC	45	
2,6-Dinitrotoluene	ND		0.791	ND		mg/Kg	⊛	NC	44 - 120	NC	45	
2-Chloronaphthalene	ND	F1	0.791	ND	F1	mg/Kg	⊛	0	33 - 120	NC	45	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MSD

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566576

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
2-Chlorophenol	ND	F1	0.791	ND	F1	mg/Kg	*	0	19 - 120	NC	45
2-Methylnaphthalene	0.32	J	0.791	0.509	J	mg/Kg	*	23	13 - 122	7	45
2-Methylphenol	ND		0.791	ND		mg/Kg	*	NC	12 - 120	NC	45
2-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	36 - 122	NC	42
2-Nitrophenol	ND	F1	0.791	ND	F1	mg/Kg	*	0	28 - 120	NC	45
3,3'-Dichlorobenzidine	ND		1.58	2.78	J	mg/Kg	*	NC	10 - 179	6	45
3-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	10 - 123	NC	45
4,6-Dinitro-2-methylphenol	ND		1.58	ND		mg/Kg	*	NC	11 - 120	NC	40
4-Bromophenyl phenyl ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	49 - 120	NC	42
4-Chloro-3-methylphenol	ND		0.791	ND		mg/Kg	*	NC	35 - 120	NC	42
4-Chloroaniline	ND		0.791	ND		mg/Kg	*	NC	10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	45 - 120	NC	44
4-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	13 - 129	NC	38
4-Nitrophenol	ND		1.58	ND		mg/Kg	*	NC	28 - 123	NC	45
Acenaphthene	ND		0.791	0.524	J	mg/Kg	*	66	33 - 120	2	45
Acenaphthylene	ND		0.791	0.459	J	mg/Kg	*	58	39 - 120	3	45
Acetophenone	ND	F1	0.791	ND	F1	mg/Kg	*	0	11 - 120	NC	45
Anthracene	ND		0.791	0.546	J	mg/Kg	*	69	30 - 127	4	45
Atrazine	ND		1.58	ND		mg/Kg	*	NC	52 - 126	NC	34
Benzaldehyde	ND	F1	1.58	ND	F1	mg/Kg	*	0	13 - 120	NC	45
Benzo[a]anthracene	0.18	J	0.791	0.626	J	mg/Kg	*	56	24 - 137	8	42
Benzo[a]pyrene	ND		0.791	0.582	J	mg/Kg	*	74	28 - 136	0	41
Benzo[b]fluoranthene	0.38	J	0.791	0.669	J	mg/Kg	*	36	21 - 142	3	42
Benzo[g,h,i]perylene	ND		0.791	0.630	J	mg/Kg	*	80	10 - 144	4	40
Benzo[k]fluoranthene	ND		0.791	0.607	J	mg/Kg	*	77	36 - 135	1	44
Bis(2-chloroethoxy)methane	ND	F1	0.791	ND	F1	mg/Kg	*	0	25 - 120	NC	45
Bis(2-chloroethyl)ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	16 - 120	NC	45
Bis(2-ethylhexyl) phthalate	ND		0.791	ND		mg/Kg	*	NC	37 - 143	NC	38
Butyl benzyl phthalate	ND		0.791	1.32	J	mg/Kg	*	NC	49 - 130	3	41
Caprolactam	ND		1.58	ND		mg/Kg	*	NC	37 - 127	NC	45
Carbazole	ND		0.791	ND		mg/Kg	*	NC	33 - 132	NC	45
Chrysene	0.16	J	0.791	0.648	J	mg/Kg	*	61	28 - 129	10	42
Dibenz(a,h)anthracene	ND		0.791	0.625	J	mg/Kg	*	79	10 - 132	1	37
Dibenzofuran	ND	F1	0.791	0.629	J	mg/Kg	*	80	33 - 120	NC	43
Diethyl phthalate	ND		0.791	ND		mg/Kg	*	NC	48 - 120	NC	38
Dimethyl phthalate	ND	F1	0.791	ND	F1	mg/Kg	*	0	45 - 120	NC	43
Di-n-butyl phthalate	ND		0.791	ND		mg/Kg	*	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND		0.791	1.90	J	mg/Kg	*	NC	34 - 152	3	39
Fluoranthene	0.21	J	0.791	0.583	J	mg/Kg	*	74	31 - 140	3	45
Fluorene	ND		0.791	0.552	J	mg/Kg	*	70	43 - 120	1	39
Hexachlorobenzene	ND		0.791	0.591	J	mg/Kg	*	75	44 - 120	3	39
Hexachlorobutadiene	ND	F1	0.791	ND	F1	mg/Kg	*	0	13 - 120	NC	45
Hexachlorocyclopentadiene	ND		0.791	ND		mg/Kg	*	NC	10 - 120	NC	45
Hexachloroethane	ND	F1	0.791	ND	F1	mg/Kg	*	0	10 - 120	NC	45
Indeno[1,2,3-cd]pyrene	ND		0.791	0.725		mg/Kg	*	92	10 - 139	1	41
Isophorone	ND	F1	0.791	ND	F1	mg/Kg	*	0	27 - 120	NC	45
N-Nitrosodi-n-propylamine	ND	F1	0.791	ND	F1	mg/Kg	*	0	23 - 120	NC	45
N-Nitrosodiphenylamine	ND	F1	0.791	ND	F1	mg/Kg	*	0	30 - 128	NC	44
Naphthalene	0.26	J	0.791	0.454	J	mg/Kg	*	25	10 - 120	1	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MSD

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566576

Prep Batch: 566295

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrobenzene	ND	F1	0.791	ND	F1	mg/Kg	☼	0	19 - 120	NC	45
Pentachlorophenol	ND		1.58	ND		mg/Kg	☼	NC	10 - 120	NC	45
Phenanthrene	0.51	J F1	0.791	0.748	F1	mg/Kg	☼	30	36 - 120	17	41
Phenol	ND		0.791	0.408	J	mg/Kg	☼	52	10 - 120	12	45
Pyrene	0.22	J	0.791	0.658	J	mg/Kg	☼	56	31 - 134	9	43
3 & 4 Methylphenol	ND		0.791	ND		mg/Kg	☼	NC	10 - 122	NC	45

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Terphenyl-d14 (Surr)	85		46 - 137
Phenol-d5 (Surr)	58		26 - 120
Nitrobenzene-d5 (Surr)	42		25 - 120
2-Fluorophenol (Surr)	45		20 - 120
2-Fluorobiphenyl (Surr)	63		34 - 120
2,4,6-Tribromophenol (Surr)	55		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-566222/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566344

Prep Batch: 566222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 13:36	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 13:36	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 13:36	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 13:36	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 13:36	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 13:36	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 13:36	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		10 - 145	03/21/23 12:08	03/22/23 13:36	1
DCB Decachlorobiphenyl	69		10 - 145	03/21/23 12:08	03/22/23 13:36	1
Tetrachloro-m-xylene	69		10 - 123	03/21/23 12:08	03/22/23 13:36	1
Tetrachloro-m-xylene	73		10 - 123	03/21/23 12:08	03/22/23 13:36	1

Lab Sample ID: LCS 240-566222/6-A

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566344

Prep Batch: 566222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endrin	0.00100	0.000894		mg/L		89	36 - 120
Heptachlor	0.00100	0.000851		mg/L		85	29 - 120
Heptachlor epoxide	0.00100	0.000846		mg/L		85	36 - 120
gamma-BHC (Lindane)	0.00100	0.000847		mg/L		85	23 - 120
Methoxychlor	0.00100	0.00105		mg/L		105	23 - 140

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-566222/6-A
Matrix: Solid
Analysis Batch: 566344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566222

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	69		10 - 145
DCB Decachlorobiphenyl	67		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	71		10 - 123

Lab Sample ID: 240-182202-11 MS
Matrix: Solid
Analysis Batch: 566344

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)
Prep Type: TCLP
Prep Batch: 566222

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Endrin	ND		0.00100	0.000958		mg/L		96	58 - 120
Heptachlor	ND		0.00100	0.000862		mg/L		86	42 - 120
Heptachlor epoxide	ND		0.00100	0.000876		mg/L		88	54 - 120
gamma-BHC (Lindane)	ND		0.00100	0.000858		mg/L		86	32 - 120
Methoxychlor	ND		0.00100	0.00124		mg/L		124	11 - 159

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	84		10 - 145
DCB Decachlorobiphenyl	75		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	67		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-566161/1-A
Matrix: Solid
Analysis Batch: 566139

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566161

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1221	ND		50	30	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1232	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1242	ND		50	19	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1248	ND		50	17	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1254	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1260	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1262	ND		50	22	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1268	ND		50	16	ug/Kg		03/21/23 08:36	03/21/23 17:31	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	86		10 - 149	03/21/23 08:36	03/21/23 17:31	1
DCB Decachlorobiphenyl	75		10 - 174	03/21/23 08:36	03/21/23 17:31	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-566161/2-A
Matrix: Solid
Analysis Batch: 566139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	765		ug/Kg		76	28 - 140
Aroclor-1260	1000	762		ug/Kg		76	39 - 153
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene	98		10 - 149				
DCB Decachlorobiphenyl	83		10 - 174				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-356959/2-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 356959

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 06:19	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 06:19	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
2,4-Dichlorophenylacetic acid (Surr)	52		26 - 136	03/23/23 21:15	03/24/23 06:19	1			
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	03/23/23 21:15	03/24/23 06:19	1			

Lab Sample ID: LCS 410-356959/3-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 356959

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00355	J	mg/L		71	58 - 148
2,4-D	0.0502	0.0342	J	mg/L		68	42 - 147
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				
2,4-Dichlorophenylacetic acid (Surr)	64		26 - 136				

Lab Sample ID: LCSD 410-356959/4-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 356959

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silvex (2,4,5-TP)	0.00500	0.00365	J	mg/L		73	58 - 148	3	30
2,4-D	0.0502	0.0355	J	mg/L		71	42 - 147	4	30
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136						
2,4-Dichlorophenylacetic acid (Surr)	67		26 - 136						

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 240-182202-11 MS

Matrix: Solid

Analysis Batch: 356976

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Prep Type: TCLP

Prep Batch: 356959

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Silvex (2,4,5-TP)	ND		0.00500	0.00345	J	mg/L		69	58 - 148
2,4-D	ND		0.0502	0.0346	J	mg/L		69	42 - 147
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136						
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136						

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-358137/1-A

Matrix: Solid

Analysis Batch: 358629

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358137

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	0.258	J I	5.0	0.014	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,6,7,8-HpCDF	0.0936	J	5.0	0.0053	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8-HxCDD	0.0678	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8-HxCDF	0.0721	J	5.0	0.0098	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8,9-HpCDF	0.0748	J	5.0	0.0073	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,6,7,8-HxCDD	0.0928	J	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,6,7,8-HxCDF	0.0470	J I	5.0	0.0093	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8-PeCDD	0.121	J I	5.0	0.0048	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8-PeCDF	0.0800	J I	5.0	0.0040	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8,9-HxCDD	0.0491	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8,9-HxCDF	0.103	J I	5.0	0.011	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,4,6,7,8-HxCDF	0.0624	J	5.0	0.0087	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,4,7,8-PeCDF	0.0666	J	5.0	0.0029	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,7,8-TCDD	0.0322	J I	1.0	0.0056	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,7,8-TCDF	ND		1.0	0.0043	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
OCDD	0.959	J I	10	0.015	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
OCDF	0.206	J I	10	0.0041	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HxCDD	0.340	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HxCDF	0.285	J I	5.0	0.0098	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HpCDD	0.258	J I	5.0	0.014	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HpCDF	0.335	J I	5.0	0.0063	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total PeCDD	0.202	J I	5.0	0.0048	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total PeCDF	0.312	J I	5.0	0.0034	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total TCDD	0.0968	J I	1.0	0.0056	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total TCDF	ND		1.0	0.0043	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
MB MB									
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
13C-OCDF	109		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-OCDD	113		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,7,8-TCDF	84		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,7,8-TCDD	91		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,4,7,8-PeCDF	88		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,4,6,7,8-HxCDF	91		40 - 135			03/28/23 09:37	03/30/23 04:29	1	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-358137/1-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 358137

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,7,8,9-HxCDF	90		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8,9-HxCDD	97		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8-PeCDF	86		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8-PeCDD	88		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,6,7,8-HxCDF	98		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,6,7,8-HxCDD	96		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8,9-HpCDF	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8-HxCDF	92		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8-HxCDD	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,6,7,8-HpCDF	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,6,7,8-HpCDD	100		40 - 135	03/28/23 09:37	03/30/23 04:29	1

Lab Sample ID: LCS 410-358137/2-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,2,3,4,6,7,8-HpCDD	100	101		ng/Kg		101	77 - 127
1,2,3,4,6,7,8-HpCDF	100	99.3		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDD	100	104		ng/Kg		104	77 - 127
1,2,3,4,7,8-HxCDF	100	101		ng/Kg		101	77 - 129
1,2,3,4,7,8,9-HpCDF	100	102		ng/Kg		102	77 - 127
1,2,3,6,7,8-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,6,7,8-HxCDF	100	101		ng/Kg		101	77 - 129
1,2,3,7,8-PeCDD	100	109		ng/Kg		109	77 - 127
1,2,3,7,8-PeCDF	100	105		ng/Kg		105	75 - 129
1,2,3,7,8,9-HxCDD	100	105		ng/Kg		105	76 - 127
1,2,3,7,8,9-HxCDF	100	102		ng/Kg		102	76 - 126
2,3,4,6,7,8-HxCDF	100	102		ng/Kg		102	78 - 128
2,3,4,7,8-PeCDF	100	103		ng/Kg		103	75 - 131
2,3,7,8-TCDD	20.0	20.3		ng/Kg		101	68 - 142
2,3,7,8-TCDF	20.0	19.8		ng/Kg		99	70 - 133
OCDD	200	207		ng/Kg		104	77 - 125
OCDF	200	203		ng/Kg		102	75 - 128

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-OCDF	129		40 - 135
13C-OCDD	133		40 - 135
13C-2,3,7,8-TCDF	88		40 - 135
13C-2,3,7,8-TCDD	93		40 - 135
13C-2,3,4,7,8-PeCDF	100		40 - 135
13C-2,3,4,6,7,8-HxCDF	93		40 - 135
13C-1,2,3,7,8,9-HxCDF	91		40 - 135
13C-1,2,3,7,8,9-HxCDD	98		40 - 135
13C-1,2,3,7,8-PeCDF	96		40 - 135
13C-1,2,3,7,8-PeCDD	98		40 - 135
13C-1,2,3,6,7,8-HxCDF	98		40 - 135
13C-1,2,3,6,7,8-HxCDD	102		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	103		40 - 135

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-358137/2-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358137

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-1,2,3,4,7,8-HxCDF	94		40 - 135
13C-1,2,3,4,7,8-HxCDD	98		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	92		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	103		40 - 135

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-566210/2-A
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566210

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:02	1
Barium	ND		0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:02	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:02	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:02	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:02	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:02	1
Silver	0.00116	J	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:02	1

Lab Sample ID: LCS 240-566210/3-A
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566210

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Arsenic	2.00	2.11		mg/L		106		50 - 150
Barium	2.00	1.93		mg/L		96		50 - 150
Cadmium	1.00	0.983		mg/L		98		50 - 150
Chromium	1.00	1.02		mg/L		102		50 - 150
Lead	1.00	0.940		mg/L		94		50 - 150
Selenium	2.00	2.18		mg/L		109		50 - 150
Silver	0.100	0.107		mg/L		107		50 - 150

Lab Sample ID: LB 240-566126/1-B
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566210

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.00499	J	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 16:58	1
Barium	0.00246	J	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 16:58	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 16:58	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 16:58	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 16:58	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 16:58	1
Silver	ND		0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 16:58	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-182202-18 MS
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0082	J B	5.00	5.13		mg/L		102	75 - 125
Barium	0.036	J B	50.0	46.9		mg/L		94	75 - 125
Cadmium	0.00034	J	1.00	0.952		mg/L		95	75 - 125
Chromium	ND		5.00	5.20	^+	mg/L		104	75 - 125
Lead	0.0066	J	5.00	4.82		mg/L		96	75 - 125
Selenium	ND		1.00	1.07		mg/L		107	75 - 125
Silver	ND		1.00	1.05	^+	mg/L		105	75 - 125

Lab Sample ID: 240-182202-18 MSD
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566210

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0082	J B	5.00	5.20		mg/L		104	75 - 125	1	20
Barium	0.036	J B	50.0	47.3		mg/L		95	75 - 125	1	20
Cadmium	0.00034	J	1.00	0.955		mg/L		95	75 - 125	0	20
Chromium	ND		5.00	5.20	^+	mg/L		104	75 - 125	0	20
Lead	0.0066	J	5.00	4.85		mg/L		97	75 - 125	1	20
Selenium	ND		1.00	1.04		mg/L		104	75 - 125	2	20
Silver	ND		1.00	1.06	^+	mg/L		106	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-566212/2-A
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566212

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:22	1

Lab Sample ID: LCS 240-566212/3-A
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566212

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00429		mg/L		86	80 - 120

Lab Sample ID: LB 240-566126/1-C
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566212

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:20	1

Lab Sample ID: 240-182202-18 MS
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566212

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.00433		mg/L		87	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 240-182202-18 MSD
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566212

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00441		mg/L		88	80 - 120	2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-182202-12 DU
Matrix: Solid
Analysis Batch: 566074

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	79.7		78.3		%		2	20
Percent Moisture	20.3		21.7		%		7	20

Lab Sample ID: 240-182202-1 DU
Matrix: Solid
Analysis Batch: 566207

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	84.0		85.2		%		1	20
Percent Moisture	16.0		14.8		%		8	20

Lab Sample ID: 240-182202-10 DU
Matrix: Solid
Analysis Batch: 566207

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	79.4		79.6		%		0.2	20
Percent Moisture	20.6		20.4		%		0.8	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS VOA

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	

Prep Batch: 566108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	5035	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	5035	
MB 240-566108/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-566108/2-A	Lab Control Sample	Total/NA	Solid	5035	

Prep Batch: 566125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	5035	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	5035	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	5035	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	5035	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	5035	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	5035	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	5035	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	5035	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	5035	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	5035	
MB 240-566125/2-A	Method Blank	Total/NA	Solid	5035	
MB 240-566125/3-A	Method Blank	Total/NA	Solid	5035	

Leach Batch: 566129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084
LB 240-566129/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 566133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8260D	566125
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8260D	566125
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	8260D	566125
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	8260D	566125
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	8260D	566125
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	8260D	566125
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
MB 240-566108/1-A	Method Blank	Total/NA	Solid	8260D	566108
MB 240-566125/2-A	Method Blank	Total/NA	Solid	8260D	566125
MB 240-566133/7	Method Blank	Total/NA	Solid	8260D	
LCS 240-566108/2-A	Lab Control Sample	Total/NA	Solid	8260D	566108

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS VOA (Continued)

Analysis Batch: 566133 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-566133/6	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 566249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8260D	566125
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	8260D	566108
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	8260D	566125
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	8260D	566125
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
MB 240-566125/3-A	Method Blank	Total/NA	Solid	8260D	566125
LCS 240-566249/3	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 566260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	8260D	566108

Analysis Batch: 566367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8260D	566129
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8260D	566129
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8260D	566129
LB 240-566129/1-A MB	Method Blank	TCLP	Solid	8260D	566129
LCS 240-566367/10	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 566719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	5035	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	5035	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	5035	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	5035	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	
MB 240-566719/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-566719/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-182202-22 MS	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	
240-182202-22 MSD	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	

Analysis Batch: 566725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	8260D	566719
MB 240-566719/1-A	Method Blank	Total/NA	Solid	8260D	566719
LCS 240-566719/2-A	Lab Control Sample	Total/NA	Solid	8260D	566719

Analysis Batch: 566934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22 MS	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22 MSD	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS Semi VOA

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	

Leach Batch: 566127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084

Prep Batch: 566221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	3510C	566127
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	3510C	566127
MB 240-566221/8-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566221/9-A	Lab Control Sample	Total/NA	Solid	3510C	

Prep Batch: 566295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	3540C	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	3540C	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	3540C	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	3540C	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	3540C	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	3540C	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	3540C	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	3540C	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	3540C	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	3540C	
MB 240-566295/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-566295/2-A	Lab Control Sample	Total/NA	Solid	3540C	
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	

Analysis Batch: 566449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8270E	566221
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8270E	566221
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8270E	566221
MB 240-566221/8-A	Method Blank	Total/NA	Solid	8270E	566221
LCS 240-566221/9-A	Lab Control Sample	Total/NA	Solid	8270E	566221

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS Semi VOA

Analysis Batch: 566576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8270E	566295
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	8270E	566295
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	8270E	566295
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	8270E	566295
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	8270E	566295
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	8270E	566295
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	8270E	566295
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	8270E	566295
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	8270E	566295
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	8270E	566295
MB 240-566295/1-A	Method Blank	Total/NA	Solid	8270E	566295
LCS 240-566295/2-A	Lab Control Sample	Total/NA	Solid	8270E	566295
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295

GC Semi VOA

Leach Batch: 356514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	

Prep Batch: 356959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356514
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8151A	356514
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8151A	356514
MB 410-356959/2-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-356959/3-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 410-356959/4-A	Lab Control Sample Dup	Total/NA	Solid	8151A	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356514

Analysis Batch: 356976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356959
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8151A	356959
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8151A	356959
MB 410-356959/2-A	Method Blank	Total/NA	Solid	8151A	356959
LCS 410-356959/3-A	Lab Control Sample	Total/NA	Solid	8151A	356959
LCSD 410-356959/4-A	Lab Control Sample Dup	Total/NA	Solid	8151A	356959

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC Semi VOA (Continued)

Analysis Batch: 356976 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356959

Composite Batch: 566080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Composite	

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	

Leach Batch: 566127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084

Analysis Batch: 566139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	8082A	566161
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	8082A	566161
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	8082A	566161
MB 240-566161/1-A	Method Blank	Total/NA	Solid	8082A	566161
LCS 240-566161/2-A	Lab Control Sample	Total/NA	Solid	8082A	566161

Prep Batch: 566161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	3546	566080
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	3546	566080
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	3546	566080
MB 240-566161/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-566161/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 566222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	3510C	566127
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	3510C	566127
MB 240-566222/5-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566222/6-A	Lab Control Sample	Total/NA	Solid	3510C	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127

Analysis Batch: 566344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8081B	566222
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8081B	566222

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC Semi VOA (Continued)

Analysis Batch: 566344 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8081B	566222
MB 240-566222/5-A	Method Blank	Total/NA	Solid	8081B	566222
LCS 240-566222/6-A	Lab Control Sample	Total/NA	Solid	8081B	566222
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8081B	566222

Specialty Organics

Prep Batch: 358137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	HRMS-Soxtherm	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	HRMS-Soxtherm	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	HRMS-Soxtherm	
MB 410-358137/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-358137/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 358629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	8290A	358137
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	8290A	358137
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	8290A	358137
MB 410-358137/1-A	Method Blank	Total/NA	Solid	8290A	358137
LCS 410-358137/2-A	Lab Control Sample	Total/NA	Solid	8290A	358137

Metals

Leach Batch: 566126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	1311	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	1311	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	1311	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	1311	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	1311	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	1311	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	1311	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	1311	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	1311	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	1311	
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	1311	
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	1311	
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	1311	
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	1311	
LB 240-566126/1-B	Method Blank	TCLP	Solid	1311	
LB 240-566126/1-C	Method Blank	TCLP	Solid	1311	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Metals

Prep Batch: 566210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	3010A	566126
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	3010A	566126
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	3010A	566126
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	3010A	566126
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	3010A	566126
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	3010A	566126
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	3010A	566126
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	3010A	566126
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	3010A	566126
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	3010A	566126
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	3010A	566126
LB 240-566126/1-B	Method Blank	TCLP	Solid	3010A	566126
MB 240-566210/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-566210/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126

Prep Batch: 566212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	7470A	566126
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	7470A	566126
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	7470A	566126
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	7470A	566126
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	7470A	566126
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	7470A	566126
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	7470A	566126
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	7470A	566126
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	7470A	566126
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	7470A	566126
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	7470A	566126
LB 240-566126/1-C	Method Blank	TCLP	Solid	7470A	566126
MB 240-566212/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-566212/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Metals

Analysis Batch: 566447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	6010D	566210
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	6010D	566210
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	6010D	566210
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	6010D	566210
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	6010D	566210
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	6010D	566210
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	6010D	566210
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	6010D	566210
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	6010D	566210
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	6010D	566210
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	6010D	566210
LB 240-566126/1-B	Method Blank	TCLP	Solid	6010D	566210
MB 240-566210/2-A	Method Blank	Total/NA	Solid	6010D	566210
LCS 240-566210/3-A	Lab Control Sample	Total/NA	Solid	6010D	566210
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210

Analysis Batch: 566547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	7470A	566212
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	7470A	566212
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	7470A	566212
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	7470A	566212
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	7470A	566212
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	7470A	566212
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	7470A	566212
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	7470A	566212
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	7470A	566212
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	7470A	566212
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	7470A	566212
LB 240-566126/1-C	Method Blank	TCLP	Solid	7470A	566212
MB 240-566212/2-A	Method Blank	Total/NA	Solid	7470A	566212
LCS 240-566212/3-A	Lab Control Sample	Total/NA	Solid	7470A	566212
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

General Chemistry

Analysis Batch: 566074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Moisture	566080
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Moisture	566080
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Moisture	566080
240-182202-12 DU	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Moisture	566080

Composite Batch: 566080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Composite	
240-182202-12 DU	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	

Analysis Batch: 566207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	Moisture	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	Moisture	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	Moisture	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	Moisture	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	Moisture	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	Moisture	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	Moisture	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	Moisture	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	Moisture	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	Moisture	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-1 DU	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	Moisture	
240-182202-10 DU	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	Moisture	

Organic Prep

Analysis Batch: 566094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	Part Size Red	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:41
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:34
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 10:48
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		40	566576	MRU	EET CAN	03/24/23 11:10

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:45
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:36
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:06
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 14:23
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		10	566576	MRU	EET CAN	03/24/23 13:04

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:50
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:38
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566108	LAM	EET CAN	03/20/23 14:08
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 23:37
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		20	566576	MRU	EET CAN	03/24/23 12:41

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:55
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:41
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566108	LAM	EET CAN	03/20/23 14:08
Total/NA	Analysis	8260D		10	566260	TJL2	EET CAN	03/22/23 05:06
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		50	566576	MRU	EET CAN	03/24/23 12:19

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:59
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:48
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:31
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		4	566576	MRU	EET CAN	03/24/23 13:27

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:04
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:50
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 11:09
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 14:13

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:08
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:52
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 11:30
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 16:07

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:21
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:54
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:57
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 14:35

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:25
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:56
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 12:13
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 13:50

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:30
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:58
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 14:00
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 16:30

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 16:16
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 15:15
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:07
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 08:39
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 16:42
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/29/23 22:49

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 16:39
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 15:38
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:39

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 09:07
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 16:59
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/29/23 23:38

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:35
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:00
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 22:22
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 18:24

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:39
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:02
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 12:56
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 16:52

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:44
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:04
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 13:17
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 17:15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:48
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:06
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 13:38
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 18:47

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 17:02
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 16:00
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:54
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 09:35
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 17:15
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/30/23 00:26

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 12:44
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 15:21
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:11
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 18:05
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 13:06
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 14:58
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:53
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:13
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 13:27
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 15:44
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:58
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:15
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		20	566934	TJL2	EET CAN	03/28/23 08:39
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		5	566576	MRU	EET CAN	03/24/23 17:38
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 19:02
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:17
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		4	566934	TJL2	EET CAN	03/28/23 09:00
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		4	566576	MRU	EET CAN	03/24/23 18:01
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 19:15
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:19
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 12:54

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

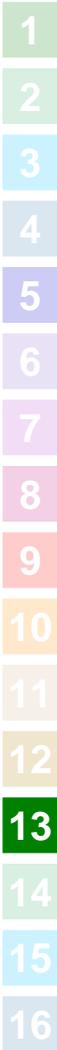
Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24



Chain of Custody Record

644942



Environment Testing America

TAL-9210

Address:

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>Wen Artrup</u>		Site Contact:		Date: <u>3/15/23</u>		COC No. <u>2</u> of <u>2</u> COCs	
Company Name: <u>Arcadis</u>		Tel/Email: <u>NSO Artrup@arcadis.com</u>		Lab Contact:		Carrier:		Sampler:	
City/State/Zip: <u>Blaugfield VA 24065</u>		Analysis Turnaround Time		Perform MS / MSD (Y / N)		For Lab Use Only:		Walk-in Client:	
Phone: <u>304-396-9424</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Filtered Sample (Y / N)		Lab Sampling:		Job / SDG No.:	
Fax:		TAT if different from Below		Sample Type (C-Comp, G-Grab)		Total VOC		Sample Specific Notes:	
Project Name: <u>NS E. Pulshine OH Dr. Treatment</u>		<input type="checkbox"/> 2 weeks <u>RUSH</u>		Sample Time		Total SVOC			
Site: <u>E. Pulshine OH</u>		<input type="checkbox"/> 1 week		Matrix		Total PCBs			
P.O.#		<input type="checkbox"/> 2 days		# of Cont.		Total Metals			
		<input type="checkbox"/> 1 day				Total SVOC			
WC-S.Track-deep-01 (8-10')	3/15/23	9:01	G	S	9	X	TCP SVOC		
WC-S.Track-deep-02 (6-8')	3/15/23	9:10	G	S	9	X	TCP SVOC		
WC-S.Track-deep-03 (8-10')	3/15/23	9:39	G	S	9	X	TCP SVOC		
WC-S.Track-deep-04 (6-8')	3/15/23	9:40	G	S	9	X	TCP SVOC		
WC-S.Track-deep-05 (4-6')	3/14/23	11:08	G	S	9	X	TCP SVOC		
WC-S.Track-deep-06 (4-6')	3/18/23	11:15	G	S	9	X	TCP SVOC		
WC-S.Track-deep-07 (4-6')	3/19/23	11:33	G	S	9	X	TCP SVOC		
WC-S.Track-deep-08 (2-4')	3/19/23	11:40	G	S	9	X	TCP SVOC		
WC-S.Track-deep-09 (2-4')	3/15/23	11:51	G	S	9	X	TCP SVOC		
WC-S.Track-deep-10 (4-6')	3/19/23	12:00	G	S	9	X	TCP SVOC		
WC-S.Track-deep-COMP01-05	3/15/23	-	C	S	-	X	TCP SVOC		
WC-S.Track-deep-COMP (06-10)	3/15/23	-	C	S	-	X	TCP SVOC		

240-182202 Chain of Custody

LAB TO GENERATE S-Pt (Composite)
LAB TO GENERATE S-Pt Composite

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Chain of Custody Record

644941



Environment Testing
America

Address:

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: JASON ARTRIP		Site Contact:		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Company Name: Arcadis		Tel/Email: Jason.Artrip@arcadis.com		Lab Contact:		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Address: 111-D Sanders Lane		Analysis Turnaround Time		Filtered Sample (Y/N)		Carrier:		Date: 3-13-23		COC No: 1 of 1						
City/State/Zip: Bluefield VA 24605		CALENDAR DAYS		Perform MS / MSD (Y/N)		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Phone: 304-3916-9424		WORKING DAYS		Total VOC		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Fax:		TAT if different from Below		Total SVOC		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Project Name: N5 East Paleshore OH decont		2 weeks		Total PCBs		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Site: East Paleshore OH		1 week		Total Metals		Carrier:		Date: 3-13-23		COC No: 1 of 1						
PO # 24030745		2 days		Total VOC		Carrier:		Date: 3-13-23		COC No: 1 of 1						
		1 day		Total SVOC		Carrier:		Date: 3-13-23		COC No: 1 of 1						
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total VOC	Total SVOC	Total PCBs	TCLP VOC	TCLP SVOC	TCLP PEST/HERBS	Dioxins/Furans	Sample Specific Notes:
WC-SB1188 - Soil + Debris		3/10/23	1335	G	S	9	N	N	X	X						
WC-APMU117 - Soil + Debris		3/10/23	1405	G	S	9	N	N	X	X						
WC-SB2655 - Soil + Debris		3/10/23	1435	G	S	9	N	N	X	X						
WC-SB2455 - Soil + Debris		3/10/23	1420	G	S	9	N	N	X	X						
WC-Comp - Soil + Debris		3/18/23	-	C	S	X	N	N			X	X	X	X		LAB TO GENERATE 5-DIGIT COMPOSITE FROM SAMPLES 1-4 AND WC-SB1597 - SOIL + DEBRIS COLLECTED 3/17 (REPORT 182146)
WC-SB2418 - Absorbents		3/10/23	1445	G	SW	2	N	N	X	X						
WC-SB1833 - Absorbents		3/10/23	1500	G	W	2	N	N	X	X						
WC-SB2446 - Absorbents		3/10/23	1510	G	W	2	N	N	X	X						
WC-SB1450 - Absorbents		3/10/23	1525	G	W	2	N	N	X	X						
WC-SB1405 - Absorbents		3/10/23	1535	G	W	2	N	N	X	X						
<p>Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other</p> <p>Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. 14043</p> <p><input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown</p> <p>Special Instructions/QC Requirements & Comments:</p>																
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months</p>																
<p>Received by: Jason Umbreit Company: EETNC Date/Time: 3-18-23 17:22</p> <p>Received by: Jason Umbreit Company: EETNC Date/Time: 3-18-23 1842</p> <p>Received in Laboratory by: Jason Umbreit Company: EETNC Date/Time: 3-18-23 1842</p>																



Eurofins - Canton Sample Receipt Form/Narrative Login # : _____
Barberton Facility

Client Arcaadis Site Name NSRR-ER Cooler unpacked by: Jane
Cooler Received on 3-18-23 Opened on 3-20-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box Client Cooler Box _____ Other _____
Packing material used: Bubble Wrap Foam Plastic Bag ~~None~~ Other the
COOLANT: Wet Ice Blue Ice Dry Ice Water None 3-20-23

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity lea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No NA
15. Were air bubbles >6 mm in any VOA vials? Yes No NA  ← Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No NA
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins Canton

180 S. Van Buren Avenue
 Barberton, OH 44203
 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)				Sampler: DelMonico, Michael		Lab PM: DelMonico, Michael		Carrier Tracking No(s):		COC No: 240-165212.1			
Client Contact: Shipping/Receiving				Phone:		E-Mail: Michael.DelMonico@et.eurofinsus.com		State of Origin: Ohio		Page: Page 1 of 1			
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note):				Job #: 240-182202-1					
Address: 2425 New Holland Pike,				Due Date Requested: 3/27/2023		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
City: Lancaster		TAT Requested (days):		PO #:									
State, Zip: PA, 17601		Project Name: NSEP - Privileged & Confidential		Project #: 24030745		Site:		SSOW#:		Other:			
Phone: 717-656-2300(Tel)		Email:		WO #:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
Project Name: NSEP - Privileged & Confidential		Project #: 24030745		Site:		SSOW#:		8290A/HRMS_Soxtim_P 8290 17 + Totals		8151A/1311_T TCLP Analyte List			
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		MATRIX (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:			
						Preservation Code:							
WC-S. TRACK-DEEP-COMP (01-05) (240-182202-11)		3/18/23		Eastern		Solid		X X		1			
WC-S. TRACK-DEEP-COMP (06-10) (240-182202-12)		3/18/23		Eastern		Solid		X X		1			
WC-COMP-SOIL + DEBRIS (240-182202-17)		3/18/23		Eastern		Solid		X X		1			
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>													
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:							
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:					
Relinquished by: <i>Sachelle Hancock</i>		Date/Time: 3/20/23 1435		Company: <i>ETC</i>		Received by: <i>[Signature]</i>		Date/Time: <i>[Signature]</i>		Company: <i>[Signature]</i>			
Relinquished by: <i>[Signature]</i>		Date/Time:		Company:		Received by: <i>[Signature]</i>		Date/Time:		Company:			
Relinquished by: <i>[Signature]</i>		Date/Time:		Company:		Received by: <i>[Signature]</i>		Date/Time: 3-21-23 0940		Company: <i>[Signature]</i>			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.5									



Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-182202-1

Login Number: 182202

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 03/21/23 10:52 AM

Creator: Ballard, Megan

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	100	104	72	77	75	74	75	78
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	91	95	66	72	73	71	69	73
240-182202-17	WC-COMP-SOIL + DEBRIS	66	70	48	54	53	50	49	55
LCS 410-358137/2-A	Lab Control Sample	129	133	88	93	100	93	91	98
MB 410-358137/1-A	Method Blank	109	113	84	91	88	91	90	97

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	73	72	78	78	81	75	75	75
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	72	72	72	75	75	70	71	71
240-182202-17	WC-COMP-SOIL + DEBRIS	53	54	54	57	54	53	55	52
LCS 410-358137/2-A	Lab Control Sample	96	98	98	102	103	94	98	92
MB 410-358137/1-A	Method Blank	86	88	98	96	93	92	93	93

Lab Sample ID	Client Sample ID	HpCDD (40-135)
		240-182202-11
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	78
240-182202-17	WC-COMP-SOIL + DEBRIS	60
LCS 410-358137/2-A	Lab Control Sample	103
MB 410-358137/1-A	Method Blank	100

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/31/2023 7:30:10 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182202-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/31/2023 7:30:10 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	21
Surrogate Summary	88
QC Sample Results	92
QC Association Summary	122
Lab Chronicle	131
Certification Summary	143
Chain of Custody	145
Receipt Checklists	151
Isotope Dilution Summary	152

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*3	ISTD response or retention time outside acceptable limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182202-1

Comments

No additional comments.

Receipt

The samples were received on 3/18/2023 6:42 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.5° C, 3.7° C, 4.3° C and 4.3° C.

All soil samples collected in TerraCore kits were frozen within 48hours of collection.

GC/MS VOA

Method 5035: The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15) and WC-SB2455-SOIL + DEBRIS (240-182202-16).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566249 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Method 8260D: Surrogate recovery for the following samples was outside control limits: WC-S. TRACK-DEEP-05 (4-6') (240-182202-5) and WC-SB1188-SOIL + DEBRIS (240-182202-13). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

Method 8260D: The MS/MSD for Prep Batch 240-566108 is not reported because the parent sample is reported as a low level soil sample.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566133 recovered above the upper control limit for: 1,1,2-Trichloro-1,2,2-trifluoroethane and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-566125 and analytical batch 240-566133 recovered outside control limits for the following analytes: 1,1,2-Trichloroethane, Toluene and Xylenes, Total. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Internal standard responses were outside of acceptance limits for the following sample: WC-S. TRACK-DEEP-02 (6-8') (240-182202-2). The sample shows evidence of matrix interference.

Method 8260D: Internal standard (ISTD) response for the following samples were outside control limits: WC-SB2655-SOIL + DEBRIS (240-182202-15) and WC-SB2455-SOIL + DEBRIS (240-182202-16). The samples were re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260D: A MS/MSD was prepared for batch 240-566108, but was analyzed in a different analytical batch: WC-S. TRACK-DEEP-04 (6-8') (240-182202-4).

Method 5035: These samples were taken off a shelf in the sample receiving refrigerator, if these plastic bags were opened in another part of the lab they could have been contaminated: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21), WC-SB1905-ABSORBENTS (240-182202-22), (240-182202-B-22 MS) and (240-182202-B-22 MSD).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-566725 was outside the method criteria for the

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1 (Continued)

Laboratory: Eurofins Canton (Continued)

following analytes: Methyl tert-butyl ether and Chloromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes are considered estimated.

Method 8260D: A MS/MSD was prepared for batch 240-566719, but it was analyzed in a different analytical batch: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19) and WC-SB2446-ABSORBENTS (240-182202-20).

Method 8260D: The following samples were diluted due to the nature of the sample matrix: WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19) and WC-SB2446-ABSORBENTS (240-182202-20). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566934 recovered above the upper control limit for: Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The laboratory control sample (LCS) associated with samples WC-S. TRACK-DEEP-COMP (01-05) (240-182202-11), WC-S. TRACK-DEEP-COMP (06-10) (240-182202-12), WC-COMP-SOIL + DEBRIS (240-182202-17) and (240-182136-D-1-F) had an acid surrogate recovery above acceptance criteria. Because the associated samples were ND for all analytes no corrective action was necessary. The results have been flagged accordingly and reported.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-566576 recovered above the upper control limit for 2-Nitrophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), WC-SB2455-SOIL + DEBRIS (240-182202-16), WC-SB2418-ABSORBENTS (240-182202-18), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22).

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22). Elevated reporting limits (RLs) are provided.

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), (240-182202-F-1-B MS) and (240-182202-F-1-C MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-S. TRACK-DEEP-COMP (01-05) (240-182202-11), WC-S. TRACK-DEEP-COMP (06-10) (240-182202-12) and WC-COMP-SOIL + DEBRIS (240-182202-17).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Job ID: 240-182202-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010D: The continuing calibration verification (CCV) associated with batch 240-566447 recovered above the upper control limit for silver and chromium. The samples associated with this CCV were below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-S. TRACK-DEEP-01 (8-10') (240-182202-1), WC-S. TRACK-DEEP-02 (6-8') (240-182202-2), WC-S. TRACK-DEEP-03 (8-10') (240-182202-3), WC-S. TRACK-DEEP-04 (6-8') (240-182202-4), WC-S. TRACK-DEEP-05 (4-6') (240-182202-5), WC-S. TRACK-DEEP-06 (4-6') (240-182202-6), WC-S. TRACK-DEEP-07 (4-6') (240-182202-7), WC-S. TRACK-DEEP-08 (2-4') (240-182202-8), WC-S. TRACK-DEEP-09 (2-4') (240-182202-9), WC-S. TRACK-DEEP-10 (4-6') (240-182202-10), WC-SB1188-SOIL + DEBRIS (240-182202-13), WC-AMU112-SOIL + DEBRIS (240-182202-14), WC-SB2655-SOIL + DEBRIS (240-182202-15), WC-SB2455-SOIL + DEBRIS (240-182202-16), WC-SB1833-ABSORBENTS (240-182202-19), WC-SB2446-ABSORBENTS (240-182202-20), WC-SB1450-ABSORBENTS (240-182202-21) and WC-SB1905-ABSORBENTS (240-182202-22).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
Part Size Red	Particle Size Reduction Preparation	None	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Solid	03/18/23 09:01	03/18/23 18:42
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Solid	03/18/23 09:10	03/18/23 18:42
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Solid	03/18/23 09:39	03/18/23 18:42
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Solid	03/18/23 09:40	03/18/23 18:42
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Solid	03/18/23 11:08	03/18/23 18:42
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Solid	03/18/23 11:15	03/18/23 18:42
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Solid	03/18/23 11:33	03/18/23 18:42
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Solid	03/18/23 11:40	03/18/23 18:42
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Solid	03/18/23 11:51	03/18/23 18:42
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Solid	03/18/23 12:00	03/18/23 18:42
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-13	WC-SB1188-SOIL + DEBRIS	Solid	03/18/23 13:35	03/18/23 18:42
240-182202-14	WC-AMU112-SOIL + DEBRIS	Solid	03/18/23 14:05	03/18/23 18:42
240-182202-15	WC-SB2655-SOIL + DEBRIS	Solid	03/18/23 14:35	03/18/23 18:42
240-182202-16	WC-SB2455-SOIL + DEBRIS	Solid	03/18/23 14:20	03/18/23 18:42
240-182202-17	WC-COMP-SOIL + DEBRIS	Solid	03/18/23 00:00	03/18/23 18:42
240-182202-18	WC-SB2418-ABSORBENTS	Solid	03/18/23 14:45	03/18/23 18:42
240-182202-19	WC-SB1833-ABSORBENTS	Solid	03/18/23 15:00	03/18/23 18:42
240-182202-20	WC-SB2446-ABSORBENTS	Solid	03/18/23 15:10	03/18/23 18:42
240-182202-21	WC-SB1450-ABSORBENTS	Solid	03/18/23 15:25	03/18/23 18:42
240-182202-22	WC-SB1905-ABSORBENTS	Solid	03/18/23 15:35	03/18/23 18:42

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.32	J	0.72	0.094	mg/Kg	40	✳	8270E	Total/NA
Benzo[a]anthracene	0.18	J	0.72	0.16	mg/Kg	40	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.38	J	0.72	0.31	mg/Kg	40	✳	8270E	Total/NA
Chrysene	0.16	J	0.72	0.072	mg/Kg	40	✳	8270E	Total/NA
Fluoranthene	0.21	J	0.72	0.21	mg/Kg	40	✳	8270E	Total/NA
Naphthalene	0.26	J	0.72	0.12	mg/Kg	40	✳	8270E	Total/NA
Phenanthrene	0.51	J F1	0.72	0.11	mg/Kg	40	✳	8270E	Total/NA
Pyrene	0.22	J	0.72	0.10	mg/Kg	40	✳	8270E	Total/NA
Arsenic	0.037	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.13	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0034	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0070	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0070	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0027	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0022	J	0.0045	0.0016	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.11	J	0.18	0.023	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	0.066	J	0.18	0.040	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.12	J	0.18	0.077	mg/Kg	10	✳	8270E	Total/NA
Chrysene	0.072	J	0.18	0.018	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	0.12	J	0.18	0.053	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.094	J	0.18	0.087	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	0.076	J	0.18	0.029	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	0.20		0.18	0.026	mg/Kg	10	✳	8270E	Total/NA
Pyrene	0.12	J	0.18	0.025	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.013	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.28	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0043	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.27	J	1.0	0.25	mg/Kg	1	✳	8260D	Total/NA
Benzo[a]anthracene	0.099	J	0.35	0.080	mg/Kg	20	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.21	J	0.35	0.15	mg/Kg	20	✳	8270E	Total/NA
Chrysene	0.089	J	0.35	0.035	mg/Kg	20	✳	8270E	Total/NA
Fluoranthene	0.15	J	0.35	0.10	mg/Kg	20	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.17	J	0.35	0.17	mg/Kg	20	✳	8270E	Total/NA
Phenanthrene	0.18	J	0.35	0.052	mg/Kg	20	✳	8270E	Total/NA
Pyrene	0.14	J	0.35	0.050	mg/Kg	20	✳	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.13	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0032	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	8.2		3.2	1.6	mg/Kg	10	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8') (Continued)

Lab Sample ID: 240-182202-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.26	J	0.90	0.12	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	1.2		0.90	0.21	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]pyrene	1.4		0.90	0.56	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.8		0.90	0.39	mg/Kg	50	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.1		0.90	0.43	mg/Kg	50	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.81	J	0.90	0.42	mg/Kg	50	✳	8270E	Total/NA
Chrysene	1.3		0.90	0.090	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	1.8		0.90	0.27	mg/Kg	50	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.0		0.90	0.44	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	0.20	J	0.90	0.15	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	0.69	J	0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
Pyrene	1.9		0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.0	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00096	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0040	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Mercury	0.00013	J	0.0020	0.00013	mg/L	1		7470A	TCLP

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0065	J	0.022	0.0039	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.047	B	0.028	0.023	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.014		0.0055	0.0020	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.13		0.075	0.0098	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.017	J	0.075	0.012	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.073	J	0.075	0.017	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.070	J	0.075	0.047	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.096		0.075	0.032	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.061	J	0.075	0.035	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.063	J	0.075	0.035	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.096		0.075	0.0074	mg/Kg	4	✳	8270E	Total/NA
Dibenzofuran	0.068	J	0.25	0.065	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.13		0.075	0.022	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.064	J	0.075	0.037	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.073	J	0.075	0.012	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.16		0.075	0.011	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.13		0.075	0.011	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.016	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00088	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0060	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0052	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0013	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0091	J	0.021	0.0038	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.047		0.026	0.022	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.039		0.038	0.0050	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.013	J	0.038	0.0062	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6') (Continued)

Lab Sample ID: 240-182202-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	0.028	J	0.038	0.0087	mg/Kg	2	☼	8270E	Total/NA
Benzo[a]pyrene	0.024	J	0.038	0.024	mg/Kg	2	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.044		0.038	0.017	mg/Kg	2	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.024	J	0.038	0.018	mg/Kg	2	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.021	J	0.038	0.018	mg/Kg	2	☼	8270E	Total/NA
Chrysene	0.030	J	0.038	0.0038	mg/Kg	2	☼	8270E	Total/NA
Fluoranthene	0.060		0.038	0.011	mg/Kg	2	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.025	J	0.038	0.019	mg/Kg	2	☼	8270E	Total/NA
Naphthalene	0.025	J	0.038	0.0062	mg/Kg	2	☼	8270E	Total/NA
Phenanthrene	0.063		0.038	0.0057	mg/Kg	2	☼	8270E	Total/NA
Pyrene	0.057		0.038	0.0055	mg/Kg	2	☼	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00097	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0045	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0061	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.019	J	0.024	0.0042	mg/Kg	1	☼	8260D	Total/NA
Acetone	0.087		0.030	0.025	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.0072	J	0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.022		0.019	0.0044	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.020		0.019	0.012	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.032		0.019	0.0084	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.022		0.019	0.0092	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.014	J	0.019	0.0090	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.024		0.019	0.0019	mg/Kg	1	☼	8270E	Total/NA
Dibenz(a,h)anthracene	0.010	J	0.019	0.0090	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.022	J	0.065	0.017	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.040		0.019	0.0058	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.0058	J	0.019	0.0036	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.017	J	0.019	0.0095	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.024		0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.055		0.019	0.0029	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.043		0.019	0.0028	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	1.1	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0054	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0057	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0029	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.047	B	0.026	0.022	mg/Kg	1	☼	8260D	Total/NA
Arsenic	0.017	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.88	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0015	J	0.050	0.00020	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4') (Continued)

Lab Sample ID: 240-182202-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0063	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0043	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0021	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0051	J	0.020	0.0036	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.028		0.025	0.021	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.0027	J	0.0050	0.0018	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.069		0.038	0.0049	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.010	J	0.038	0.0072	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.012	J	0.038	0.0061	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.035	J	0.038	0.0086	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.030	J	0.038	0.023	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.047		0.038	0.016	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.028	J	0.038	0.018	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.026	J	0.038	0.017	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.070		0.038	0.0037	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.018	J	0.038	0.017	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	0.060		0.038	0.011	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.0092	J	0.038	0.0069	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.028	J	0.038	0.018	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	0.040		0.038	0.0061	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	0.091		0.038	0.0056	mg/Kg	2	✳	8270E	Total/NA
Pyrene	0.062		0.038	0.0054	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.015	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.83	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0011	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0052	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0040	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0015	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.012	J	0.024	0.0043	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.069		0.030	0.026	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.0089		0.0061	0.0022	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	1	✳	8270E	Total/NA
Acenaphthene	0.0057	J	0.019	0.0036	mg/Kg	1	✳	8270E	Total/NA
Anthracene	0.0086	J	0.019	0.0031	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	0.032		0.019	0.0043	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	0.028		0.019	0.012	mg/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.044		0.019	0.0082	mg/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.024		0.019	0.0090	mg/Kg	1	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.018	J	0.019	0.0088	mg/Kg	1	✳	8270E	Total/NA
Chrysene	0.032		0.019	0.0019	mg/Kg	1	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.011	J	0.019	0.0088	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.024	J	0.063	0.016	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.054		0.019	0.0056	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.0061	J	0.019	0.0035	mg/Kg	1	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6') (Continued)

Lab Sample ID: 240-182202-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	0.021		0.019	0.0093	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.024		0.019	0.0031	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.067		0.019	0.0028	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.055		0.019	0.0027	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.014	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.99	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0012	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0088	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0041	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0029	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	27	B	6.2	0.066	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	10	B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	0.36	J B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	1.9	J B	6.2	0.040	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	1.3	J B	6.2	0.026	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	1.2	J B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	1.6	J B	6.2	0.040	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDD	0.58	J I B	6.2	0.012	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	0.72	J B	6.2	0.024	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	0.88	J B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.044	ng/Kg	1	☼	8290A	Total/NA
2,3,4,6,7,8-HxCDF	1.2	J B	6.2	0.039	ng/Kg	1	☼	8290A	Total/NA
2,3,4,7,8-PeCDF	1.6	J B	6.2	0.019	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDD	0.44	J B	1.2	0.0093	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDF	0.43	J I	1.2	0.022	ng/Kg	1	☼	8290A	Total/NA
OCDD	450	B	12	0.075	ng/Kg	1	☼	8290A	Total/NA
OCDF	22	B	12	0.034	ng/Kg	1	☼	8290A	Total/NA
Total HxCDD	12	B	6.2	0.020	ng/Kg	1	☼	8290A	Total/NA
Total HxCDF	19	B	6.2	0.041	ng/Kg	1	☼	8290A	Total/NA
Total HpCDD	27	B	6.2	0.066	ng/Kg	1	☼	8290A	Total/NA
Total HpCDF	25	B	6.2	0.023	ng/Kg	1	☼	8290A	Total/NA
Total PeCDD	5.4	J I B	6.2	0.012	ng/Kg	1	☼	8290A	Total/NA
Total PeCDF	12	I B	6.2	0.021	ng/Kg	1	☼	8290A	Total/NA
Total TCDD	3.5	I B	1.2	0.0093	ng/Kg	1	☼	8290A	Total/NA
Total TCDF	6.2	I	1.2	0.022	ng/Kg	1	☼	8290A	Total/NA

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	6.5	B	6.0	0.060	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	0.84	J I B	6.0	0.0084	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	0.15	J I B	6.0	0.0066	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	0.21	J B	6.0	0.010	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	0.13	J I B	6.0	0.011	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	0.18	J I B	6.0	0.0071	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	0.16	J B	6.0	0.010	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	0.12	J B	6.0	0.0068	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	0.26	J B	6.0	0.0067	ng/Kg	1	☼	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)
(Continued)

Lab Sample ID: 240-182202-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.18	J B	6.0	0.0096	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	0.18	J B	6.0	0.0053	ng/Kg	1	✳	8290A	Total/NA
OCDD	250	B	12	0.065	ng/Kg	1	✳	8290A	Total/NA
OCDF	1.7	J B	12	0.013	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	3.9	J I B	6.0	0.0068	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	1.4	J I B	6.0	0.011	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	6.5	B	6.0	0.060	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	0.97	J I B	6.0	0.0097	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	0.76	J I B	6.0	0.0044	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	1.6	J I B	6.0	0.0060	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	0.20	J I B	1.2	0.013	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	0.49	J I	1.2	0.0061	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0048		0.0042	0.0015	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.049	J	0.082	0.028	mg/Kg	1	✳	8270E	Total/NA
2-Methylnaphthalene	0.49		0.025	0.0032	mg/Kg	1	✳	8270E	Total/NA
Acenaphthene	0.035		0.025	0.0047	mg/Kg	1	✳	8270E	Total/NA
Acenaphthylene	0.035		0.025	0.0066	mg/Kg	1	✳	8270E	Total/NA
Anthracene	0.083		0.025	0.0040	mg/Kg	1	✳	8270E	Total/NA
Benzaldehyde	0.065	J	0.16	0.038	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]anthracene	0.41		0.025	0.0056	mg/Kg	1	✳	8270E	Total/NA
Benzo[a]pyrene	0.50		0.025	0.015	mg/Kg	1	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.80		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.20		0.025	0.012	mg/Kg	1	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.28		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.14		0.12	0.084	mg/Kg	1	✳	8270E	Total/NA
Carbazole	0.063	J	0.082	0.031	mg/Kg	1	✳	8270E	Total/NA
Chrysene	0.62		0.025	0.0025	mg/Kg	1	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.066		0.025	0.011	mg/Kg	1	✳	8270E	Total/NA
Dibenzofuran	0.19		0.082	0.021	mg/Kg	1	✳	8270E	Total/NA
Fluoranthene	0.90		0.025	0.0073	mg/Kg	1	✳	8270E	Total/NA
Fluorene	0.047		0.025	0.0045	mg/Kg	1	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.19		0.025	0.012	mg/Kg	1	✳	8270E	Total/NA
Naphthalene	0.28		0.025	0.0040	mg/Kg	1	✳	8270E	Total/NA
Phenanthrene	0.54		0.025	0.0037	mg/Kg	1	✳	8270E	Total/NA
Phenol	0.014	J	0.082	0.013	mg/Kg	1	✳	8270E	Total/NA
Pyrene	0.85		0.025	0.0035	mg/Kg	1	✳	8270E	Total/NA
Arsenic	0.016	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.43	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0031	J	0.050	0.00020	mg/L	1		6010D	TCLP
Chromium	0.0042	J ^+	0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.020	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0018	J B ^+	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1'-Biphenyl	0.14		0.12	0.041	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.95		0.036	0.0047	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.39		0.036	0.0069	mg/Kg	2	✳	8270E	Total/NA
Acenaphthylene	0.26		0.036	0.0097	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.40		0.036	0.0058	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.90		0.036	0.0083	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.92		0.036	0.023	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	1.4		0.036	0.016	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.36		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.48		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Carbazole	0.21		0.12	0.046	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.85		0.036	0.0036	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.11		0.036	0.017	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.65		0.12	0.031	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	1.8		0.036	0.011	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.47		0.036	0.0066	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.32		0.036	0.018	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	1.2		0.036	0.0058	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	1.7		0.036	0.0054	mg/Kg	2	✳	8270E	Total/NA
Pyrene	1.9		0.036	0.0052	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.011	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.67	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.024	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.013		0.013	0.0024	mg/Kg	1	✳	8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	0.012	J	0.013	0.0025	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.072		0.017	0.014	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.0016	J	0.0033	0.00046	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.0012	J	0.0066	0.00081	mg/Kg	1	✳	8260D	Total/NA
Toluene	0.00095	J **	0.0033	0.00051	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.0017	J **	0.0066	0.0011	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.17		0.035	0.0046	mg/Kg	2	✳	8270E	Total/NA
Acenaphthene	0.13		0.035	0.0067	mg/Kg	2	✳	8270E	Total/NA
Acenaphthylene	0.015	J	0.035	0.0093	mg/Kg	2	✳	8270E	Total/NA
Anthracene	0.28		0.035	0.0056	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.68		0.035	0.0079	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]pyrene	0.64		0.035	0.022	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.93		0.035	0.015	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.26		0.035	0.017	mg/Kg	2	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.39		0.035	0.016	mg/Kg	2	✳	8270E	Total/NA
Bis(2-ethylhexyl) phthalate	0.16		0.16	0.12	mg/Kg	2	✳	8270E	Total/NA
Butyl benzyl phthalate	0.089	J	0.16	0.051	mg/Kg	2	✳	8270E	Total/NA
Carbazole	0.25		0.12	0.044	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.85		0.035	0.0035	mg/Kg	2	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.083		0.035	0.016	mg/Kg	2	✳	8270E	Total/NA
Dibenzofuran	0.13		0.12	0.030	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	2.1		0.035	0.010	mg/Kg	2	✳	8270E	Total/NA
Fluorene	0.19		0.035	0.0064	mg/Kg	2	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	0.25		0.035	0.017	mg/Kg	2	☼	8270E	Total/NA
Naphthalene	0.12		0.035	0.0056	mg/Kg	2	☼	8270E	Total/NA
Phenanthrene	1.5		0.035	0.0052	mg/Kg	2	☼	8270E	Total/NA
Pyrene	1.7		0.035	0.0050	mg/Kg	2	☼	8270E	Total/NA
Arsenic	0.010	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.62	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0010	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.0047	J *+	0.0083	0.0013	mg/Kg	1	☼	8260D	Total/NA
2-Methylnaphthalene	0.13		0.017	0.0023	mg/Kg	1	☼	8270E	Total/NA
Acenaphthene	0.010	J	0.017	0.0033	mg/Kg	1	☼	8270E	Total/NA
Acenaphthylene	0.0065	J	0.017	0.0047	mg/Kg	1	☼	8270E	Total/NA
Anthracene	0.018		0.017	0.0028	mg/Kg	1	☼	8270E	Total/NA
Benzaldehyde	0.042	J	0.12	0.027	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]anthracene	0.095		0.017	0.0040	mg/Kg	1	☼	8270E	Total/NA
Benzo[a]pyrene	0.096		0.017	0.011	mg/Kg	1	☼	8270E	Total/NA
Benzo[b]fluoranthene	0.15		0.017	0.0075	mg/Kg	1	☼	8270E	Total/NA
Benzo[g,h,i]perylene	0.035		0.017	0.0082	mg/Kg	1	☼	8270E	Total/NA
Benzo[k]fluoranthene	0.048		0.017	0.0080	mg/Kg	1	☼	8270E	Total/NA
Chrysene	0.12		0.017	0.0017	mg/Kg	1	☼	8270E	Total/NA
Dibenzofuran	0.062		0.058	0.015	mg/Kg	1	☼	8270E	Total/NA
Fluoranthene	0.21		0.017	0.0052	mg/Kg	1	☼	8270E	Total/NA
Fluorene	0.0097	J	0.017	0.0032	mg/Kg	1	☼	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.033		0.017	0.0085	mg/Kg	1	☼	8270E	Total/NA
Naphthalene	0.071		0.017	0.0028	mg/Kg	1	☼	8270E	Total/NA
Phenanthrene	0.19		0.017	0.0026	mg/Kg	1	☼	8270E	Total/NA
Pyrene	0.19		0.017	0.0025	mg/Kg	1	☼	8270E	Total/NA
Arsenic	0.0071	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.69	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0042	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	180	B	7.9	0.12	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	62	B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDD	4.4	J B	7.9	0.057	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8-HxCDF	4.2	J B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	2.8	J B	7.9	0.18	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDD	9.4	B	7.9	0.059	ng/Kg	1	☼	8290A	Total/NA
1,2,3,6,7,8-HxCDF	3.9	J B	7.9	0.14	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDD	5.1	J B	7.9	0.039	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8-PeCDF	1.4	J B	7.9	0.051	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDD	20	B	7.9	0.060	ng/Kg	1	☼	8290A	Total/NA
1,2,3,7,8,9-HxCDF	0.79	J B	7.9	0.16	ng/Kg	1	☼	8290A	Total/NA
2,3,4,6,7,8-HxCDF	5.2	J B	7.9	0.13	ng/Kg	1	☼	8290A	Total/NA
2,3,4,7,8-PeCDF	6.4	J B	7.9	0.040	ng/Kg	1	☼	8290A	Total/NA
2,3,7,8-TCDD	1.2	J B	1.6	0.019	ng/Kg	1	☼	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS (Continued)

Lab Sample ID: 240-182202-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	1.2	J	1.6	0.041	ng/Kg	1	✳	8290A	Total/NA
OCDD	1600	B	16	0.14	ng/Kg	1	✳	8290A	Total/NA
OCDF	80	B	16	0.087	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	130	B	7.9	0.059	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	91	B	7.9	0.14	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	180	B	7.9	0.12	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	130	B	7.9	0.16	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	42	I B	7.9	0.039	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	39	I B	7.9	0.046	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	11	I B	1.6	0.019	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	34	I	1.6	0.041	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0082	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.036	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00034	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0066	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.13	J	0.42	0.067	mg/Kg	1		8270E	Total/NA
Arsenic	0.0048	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.068	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Lead	0.0077	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0066	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.020	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Lead	0.0050	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]anthracene	0.50	J	1.9	0.43	mg/Kg	5		8270E	Total/NA
Benzo[b]fluoranthene	1.0	J	1.9	0.81	mg/Kg	5		8270E	Total/NA
Butyl benzyl phthalate	3.4	J	8.8	2.8	mg/Kg	5		8270E	Total/NA
Fluoranthene	0.78	J	1.9	0.56	mg/Kg	5		8270E	Total/NA
Phenanthrene	0.96	J	1.9	0.28	mg/Kg	5		8270E	Total/NA
Pyrene	0.82	J	1.9	0.27	mg/Kg	5		8270E	Total/NA
Arsenic	0.0075	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.080	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00041	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0077	J	0.050	0.0028	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.23	J	0.91	0.17	mg/Kg	4		8270E	Total/NA
Benzo[a]anthracene	0.34	J	0.91	0.21	mg/Kg	4		8270E	Total/NA
Bis(2-ethylhexyl) phthalate	4.1	J	4.2	3.1	mg/Kg	4		8270E	Total/NA
Chrysene	0.37	J	0.91	0.090	mg/Kg	4		8270E	Total/NA
Fluoranthene	1.2		0.91	0.27	mg/Kg	4		8270E	Total/NA
Fluorene	0.20	J	0.91	0.17	mg/Kg	4		8270E	Total/NA
Phenanthrene	0.90	J	0.91	0.14	mg/Kg	4		8270E	Total/NA
Pyrene	1.2		0.91	0.13	mg/Kg	4		8270E	Total/NA
Arsenic	0.0071	J B	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.066	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00038	J	0.050	0.00020	mg/L	1		6010D	TCLP
PSR sample generated	Done				NONE	1		Part Size Red	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0049	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2,2-Tetrachloroethane	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0049	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1,2-Trichloroethane	ND	+	0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1-Dichloroethane	ND		0.0049	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,1-Dichloroethene	ND		0.0049	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2,4-Trichlorobenzene	ND		0.0049	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dibromo-3-Chloropropane	ND		0.0098	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Ethylene Dibromide	ND		0.0049	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichlorobenzene	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloroethane	ND		0.0049	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloropropane	ND		0.0049	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,3-Dichlorobenzene	ND		0.0049	0.00080	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
1,4-Dichlorobenzene	ND		0.0049	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
2-Butanone (MEK)	ND		0.020	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
2-Hexanone	ND		0.020	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Acetone	ND		0.024	0.021	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Benzene	ND		0.0049	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Dichlorobromomethane	ND		0.0049	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Bromoform	ND		0.0049	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Bromomethane	ND		0.0049	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Carbon disulfide	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Carbon tetrachloride	ND		0.0049	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chlorobenzene	ND		0.0049	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloroethane	ND		0.0049	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloroform	ND		0.0049	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chloromethane	ND		0.0049	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
cis-1,2-Dichloroethene	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
cis-1,3-Dichloropropene	ND		0.0049	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Cyclohexane	ND		0.0098	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Chlorodibromomethane	ND		0.0049	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Dichlorodifluoromethane	ND		0.0049	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Ethylbenzene	ND		0.0049	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Isopropylbenzene	ND		0.0049	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methyl acetate	ND		0.024	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methyl tert-butyl ether	ND		0.0049	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methylcyclohexane	ND		0.0098	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Methylene Chloride	ND		0.024	0.012	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Styrene	ND		0.0049	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Tetrachloroethene	ND		0.0049	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Toluene	ND	+	0.0049	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
trans-1,2-Dichloroethene	ND		0.0049	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
trans-1,3-Dichloropropene	ND		0.0049	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Trichloroethene	ND		0.0049	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Trichlorofluoromethane	ND		0.0049	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Vinyl chloride	ND		0.0049	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1
Xylenes, Total	ND	+	0.0098	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 10:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	82		56 - 125	03/19/23 13:00	03/21/23 10:48	1
Dibromofluoromethane (Surr)	84		41 - 138	03/19/23 13:00	03/21/23 10:48	1
4-Bromofluorobenzene (Surr)	77		41 - 143	03/19/23 13:00	03/21/23 10:48	1
1,2-Dichloroethane-d4 (Surr)	86		58 - 125	03/19/23 13:00	03/21/23 10:48	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.4	0.82	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
bis (2-chloroisopropyl) ether	ND	F1	4.8	0.48	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4,5-Trichlorophenol	ND		7.2	3.3	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4,6-Trichlorophenol	ND		7.2	3.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dichlorophenol	ND		7.2	2.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dimethylphenol	ND		7.2	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dinitrophenol	ND		16	6.8	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,4-Dinitrotoluene	ND		9.6	3.0	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2,6-Dinitrotoluene	ND		9.6	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Chloronaphthalene	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Chlorophenol	ND	F1	2.4	0.48	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Methylnaphthalene	0.32	J	0.72	0.094	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Methylphenol	ND		9.6	1.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Nitroaniline	ND		9.6	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
2-Nitrophenol	ND	F1	2.4	0.63	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
3,3'-Dichlorobenzidine	ND		4.8	2.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
3-Nitroaniline	ND		9.6	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4,6-Dinitro-2-methylphenol	ND		16	3.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Bromophenyl phenyl ether	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chloro-3-methylphenol	ND		7.2	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chloroaniline	ND		7.2	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Chlorophenyl phenyl ether	ND	F1	2.4	0.67	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Nitroaniline	ND		9.6	2.9	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
4-Nitrophenol	ND		16	4.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acenaphthene	ND		0.72	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acenaphthylene	ND		0.72	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Acetophenone	ND	F1	4.8	0.53	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Anthracene	ND		0.72	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Atrazine	ND		9.6	1.7	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzaldehyde	ND	F1	4.8	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[a]anthracene	0.18	J	0.72	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[a]pyrene	ND		0.72	0.45	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[b]fluoranthene	0.38	J	0.72	0.31	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[g,h,i]perylene	ND		0.72	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Benzo[k]fluoranthene	ND		0.72	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-chloroethoxy)methane	ND	F1	4.8	0.58	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-chloroethyl)ether	ND	F1	4.8	0.58	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Bis(2-ethylhexyl) phthalate	ND		3.4	2.5	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Butyl benzyl phthalate	ND		3.4	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Caprolactam	ND		16	3.6	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Carbazole	ND		2.4	0.91	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Chrysene	0.16	J	0.72	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40
Dibenz(a,h)anthracene	ND		0.72	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 11:10	40

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND	F1	2.4	0.63	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Diethyl phthalate	ND		3.4	1.5	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Dimethyl phthalate	ND	F1	3.4	0.67	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Di-n-butyl phthalate	ND		3.4	2.4	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Di-n-octyl phthalate	ND		3.4	1.3	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Fluoranthene	0.21	J	0.72	0.21	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Fluorene	ND		0.72	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorobenzene	ND		0.72	0.14	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorobutadiene	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachlorocyclopentadiene	ND		16	3.0	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Hexachloroethane	ND	F1	2.4	0.43	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Indeno[1,2,3-cd]pyrene	ND		0.72	0.35	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Isophorone	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
N-Nitrosodi-n-propylamine	ND	F1	2.4	0.53	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
N-Nitrosodiphenylamine	ND	F1	2.4	0.58	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Naphthalene	0.26	J	0.72	0.12	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Nitrobenzene	ND	F1	4.8	0.63	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Pentachlorophenol	ND		7.2	2.8	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Phenanthrene	0.51	J F1	0.72	0.11	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Phenol	ND		2.4	0.39	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
Pyrene	0.22	J	0.72	0.10	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40
3 & 4 Methylphenol	ND		19	1.4	mg/Kg	✱	03/22/23 08:13	03/24/23 11:10	40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		46 - 137	03/22/23 08:13	03/24/23 11:10	40
Phenol-d5 (Surr)	61		26 - 120	03/22/23 08:13	03/24/23 11:10	40
Nitrobenzene-d5 (Surr)	40		25 - 120	03/22/23 08:13	03/24/23 11:10	40
2-Fluorophenol (Surr)	45		20 - 120	03/22/23 08:13	03/24/23 11:10	40
2-Fluorobiphenyl (Surr)	61		34 - 120	03/22/23 08:13	03/24/23 11:10	40
2,4,6-Tribromophenol (Surr)	48		10 - 120	03/22/23 08:13	03/24/23 11:10	40

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.037	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:41	1
Barium	0.13	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:41	1
Cadmium	0.0034	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:41	1
Chromium	0.0070	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:41	1
Lead	0.0070	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:41	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:41	1
Silver	0.0027	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:41	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	16.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2,2-Tetrachloroethane	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0045	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1,2-Trichloroethane	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1-Dichloroethane	ND		0.0045	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,1-Dichloroethene	ND		0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2,4-Trichlorobenzene	ND		0.0045	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dibromo-3-Chloropropane	ND		0.0090	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Ethylene Dibromide	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichlorobenzene	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloroethane	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloropropane	ND		0.0045	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,3-Dichlorobenzene	ND		0.0045	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
1,4-Dichlorobenzene	ND		0.0045	0.00079	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
2-Butanone (MEK)	ND		0.018	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
2-Hexanone	ND		0.018	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
4-Methyl-2-pentanone (MIBK)	ND		0.018	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Acetone	ND		0.022	0.019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Benzene	ND		0.0045	0.00063	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Dichlorobromomethane	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Bromoform	ND		0.0045	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Bromomethane	ND		0.0045	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Carbon disulfide	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Carbon tetrachloride	ND		0.0045	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chlorobenzene	ND		0.0045	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloroethane	ND		0.0045	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloroform	ND		0.0045	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chloromethane	ND		0.0045	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
cis-1,2-Dichloroethene	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
cis-1,3-Dichloropropene	ND		0.0045	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Cyclohexane	ND		0.0090	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Chlorodibromomethane	ND		0.0045	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Dichlorodifluoromethane	ND		0.0045	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Ethylbenzene	ND		0.0045	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Isopropylbenzene	ND		0.0045	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methyl acetate	ND		0.022	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methyl tert-butyl ether	ND		0.0045	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methylcyclohexane	ND		0.0090	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Methylene Chloride	ND		0.022	0.011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Styrene	ND		0.0045	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Tetrachloroethene	ND		0.0045	0.00066	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Toluene	ND		0.0045	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
trans-1,2-Dichloroethene	ND		0.0045	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
trans-1,3-Dichloropropene	ND		0.0045	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Trichloroethene	ND		0.0045	0.00057	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Trichlorofluoromethane	ND		0.0045	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Vinyl chloride	0.0022	J	0.0045	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1
Xylenes, Total	ND		0.0090	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:06	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	73	*3	56 - 125	03/19/23 13:00	03/21/23 14:23	1
Toluene-d8 (Surr)	122		56 - 125	03/19/23 13:00	03/21/23 21:06	1
Dibromofluoromethane (Surr)	95	*3	41 - 138	03/19/23 13:00	03/21/23 14:23	1
Dibromofluoromethane (Surr)	106		41 - 138	03/19/23 13:00	03/21/23 21:06	1
4-Bromofluorobenzene (Surr)	77	*3	41 - 143	03/19/23 13:00	03/21/23 14:23	1
4-Bromofluorobenzene (Surr)	127		41 - 143	03/19/23 13:00	03/21/23 21:06	1
1,2-Dichloroethane-d4 (Surr)	122	*3	58 - 125	03/19/23 13:00	03/21/23 14:23	1
1,2-Dichloroethane-d4 (Surr)	117		58 - 125	03/19/23 13:00	03/21/23 21:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.59	0.20	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4,5-Trichlorophenol	ND		1.8	0.82	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4,6-Trichlorophenol	ND		1.8	0.76	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dichlorophenol	ND		1.8	0.52	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dimethylphenol	ND		1.8	0.47	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dinitrophenol	ND		3.9	1.7	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,4-Dinitrotoluene	ND		2.4	0.74	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2,6-Dinitrotoluene	ND		2.4	0.66	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Chloronaphthalene	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Chlorophenol	ND		0.59	0.12	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Methylnaphthalene	0.11	J	0.18	0.023	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Methylphenol	ND		2.4	0.37	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Nitroaniline	ND		2.4	0.47	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
2-Nitrophenol	ND		0.59	0.15	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
3,3'-Dichlorobenzidine	ND		1.2	0.51	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
3-Nitroaniline	ND		2.4	0.58	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4,6-Dinitro-2-methylphenol	ND		3.9	0.95	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Bromophenyl phenyl ether	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chloro-3-methylphenol	ND		1.8	0.53	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chloroaniline	ND		1.8	0.36	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Chlorophenyl phenyl ether	ND		0.59	0.17	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Nitroaniline	ND		2.4	0.71	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
4-Nitrophenol	ND		3.9	1.1	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acenaphthene	ND		0.18	0.034	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acenaphthylene	ND		0.18	0.048	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Acetophenone	ND		1.2	0.13	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Anthracene	ND		0.18	0.029	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Atrazine	ND		2.4	0.43	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzaldehyde	ND		1.2	0.27	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[a]anthracene	0.066	J	0.18	0.040	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[a]pyrene	ND		0.18	0.11	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[b]fluoranthene	0.12	J	0.18	0.077	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[g,h,i]perylene	ND		0.18	0.084	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Benzo[k]fluoranthene	ND		0.18	0.082	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-chloroethoxy)methane	ND		1.2	0.14	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-chloroethyl)ether	ND		1.2	0.14	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Bis(2-ethylhexyl) phthalate	ND		0.83	0.61	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10
Butyl benzyl phthalate	ND		0.83	0.26	mg/Kg	☼	03/22/23 08:13	03/24/23 13:04	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		3.9	0.89	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Carbazole	ND		0.59	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Chrysene	0.072	J	0.18	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dibenz(a,h)anthracene	ND		0.18	0.082	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dibenzofuran	ND		0.59	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Diethyl phthalate	ND		0.83	0.37	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Dimethyl phthalate	ND		0.83	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Di-n-butyl phthalate	ND		0.83	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Di-n-octyl phthalate	ND		0.83	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Fluoranthene	0.12	J	0.18	0.053	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Fluorene	ND		0.18	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorobenzene	ND		0.18	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorobutadiene	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachlorocyclopentadiene	ND		3.9	0.74	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Hexachloroethane	ND		0.59	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Indeno[1,2,3-cd]pyrene	0.094	J	0.18	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Isophorone	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
N-Nitrosodi-n-propylamine	ND		0.59	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
N-Nitrosodiphenylamine	ND		0.59	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Naphthalene	0.076	J	0.18	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Nitrobenzene	ND		1.2	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Pentachlorophenol	ND		1.8	0.69	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Phenanthrene	0.20		0.18	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Phenol	ND		0.59	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
Pyrene	0.12	J	0.18	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10
3 & 4 Methylphenol	ND		4.7	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 13:04	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137	03/22/23 08:13	03/24/23 13:04	10
Phenol-d5 (Surr)	53		26 - 120	03/22/23 08:13	03/24/23 13:04	10
Nitrobenzene-d5 (Surr)	39		25 - 120	03/22/23 08:13	03/24/23 13:04	10
2-Fluorophenol (Surr)	44		20 - 120	03/22/23 08:13	03/24/23 13:04	10
2-Fluorobiphenyl (Surr)	57		34 - 120	03/22/23 08:13	03/24/23 13:04	10
2,4,6-Tribromophenol (Surr)	55		10 - 120	03/22/23 08:13	03/24/23 13:04	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:45	1
Barium	0.28	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:45	1
Cadmium	0.0024	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:45	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:45	1
Lead	0.0043	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:45	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:45	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:36	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	17.0		0.1	0.1	%			03/21/23 11:05	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.26	0.081	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2,2-Tetrachloroethane	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.26	0.069	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1,2-Trichloroethane	ND		0.26	0.059	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1-Dichloroethane	ND		0.26	0.050	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,1-Dichloroethene	ND		0.26	0.085	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2,4-Trichlorobenzene	ND		0.26	0.14	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dibromo-3-Chloropropane	ND		0.52	0.23	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Ethylene Dibromide	ND		0.26	0.082	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichlorobenzene	ND		0.26	0.12	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloroethane	ND		0.26	0.049	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloropropane	ND		0.26	0.038	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,3-Dichlorobenzene	ND		0.26	0.048	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
1,4-Dichlorobenzene	ND		0.26	0.057	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
2-Hexanone	ND		1.0	0.27	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Acetone	0.27	J	1.0	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Benzene	ND		0.26	0.043	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Dichlorobromomethane	ND		0.26	0.063	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Bromoform	ND		0.26	0.24	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Bromomethane	ND		0.26	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Carbon disulfide	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Carbon tetrachloride	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chlorobenzene	ND		0.26	0.036	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloroethane	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloroform	ND		0.26	0.056	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chloromethane	ND		0.26	0.068	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
cis-1,2-Dichloroethene	ND		0.26	0.041	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
cis-1,3-Dichloropropene	ND		0.26	0.13	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Cyclohexane	ND		0.52	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Chlorodibromomethane	ND		0.26	0.12	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Dichlorodifluoromethane	ND		0.26	0.055	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Ethylbenzene	ND		0.26	0.049	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Isopropylbenzene	ND		0.26	0.039	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methyl acetate	ND		1.3	0.17	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methyl tert-butyl ether	ND		0.26	0.038	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methylcyclohexane	ND		0.52	0.068	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Methylene Chloride	ND		0.52	0.40	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Styrene	ND		0.26	0.054	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Tetrachloroethene	ND		0.26	0.10	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Toluene	ND		0.26	0.25	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
trans-1,2-Dichloroethene	ND		0.26	0.064	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
trans-1,3-Dichloropropene	ND		0.26	0.11	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Trichloroethene	ND		0.26	0.15	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Trichlorofluoromethane	ND		0.26	0.14	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Vinyl chloride	ND		0.26	0.13	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1
Xylenes, Total	ND		0.52	0.094	mg/Kg	✳	03/20/23 14:08	03/21/23 23:37	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	119		56 - 125	03/20/23 14:08	03/21/23 23:37	1
Dibromofluoromethane (Surr)	102		41 - 138	03/20/23 14:08	03/21/23 23:37	1
4-Bromofluorobenzene (Surr)	119		41 - 143	03/20/23 14:08	03/21/23 23:37	1
1,2-Dichloroethane-d4 (Surr)	118		58 - 125	03/20/23 14:08	03/21/23 23:37	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dimethylphenol	ND		3.5	0.93	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,4-Dinitrotoluene	ND		4.7	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Chlorophenol	ND		1.2	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Methylnaphthalene	ND		0.35	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Methylphenol	ND		4.7	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Nitroaniline	ND		4.7	0.93	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
2-Nitrophenol	ND		1.2	0.30	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
3-Nitroaniline	ND		4.7	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chloroaniline	ND		3.5	0.70	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Nitroaniline	ND		4.7	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
4-Nitrophenol	ND		7.7	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acenaphthene	ND		0.35	0.067	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acenaphthylene	ND		0.35	0.094	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Acetophenone	ND		2.3	0.26	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Anthracene	ND		0.35	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Atrazine	ND		4.7	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzaldehyde	ND		2.3	0.54	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[a]anthracene	0.099	J	0.35	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[a]pyrene	ND		0.35	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[b]fluoranthene	0.21	J	0.35	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[g,h,i]perylene	ND		0.35	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Benzo[k]fluoranthene	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Butyl benzyl phthalate	ND		1.6	0.51	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Caprolactam	ND		7.7	1.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Carbazole	ND		1.2	0.44	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Chrysene	0.089	J	0.35	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 12:41	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.2	0.30	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Diethyl phthalate	ND		1.6	0.72	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Dimethyl phthalate	ND		1.6	0.33	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Di-n-octyl phthalate	ND		1.6	0.65	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Fluoranthene	0.15	J	0.35	0.10	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Fluorene	ND		0.35	0.064	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Hexachlorobenzene	ND		0.35	0.067	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Hexachlorocyclopentadiene	ND		7.7	1.4	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Hexachloroethane	ND		1.2	0.21	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Indeno[1,2,3-cd]pyrene	0.17	J	0.35	0.17	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Isophorone	ND		1.2	0.28	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Naphthalene	ND		0.35	0.056	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Nitrobenzene	ND		2.3	0.30	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Pentachlorophenol	ND		3.5	1.4	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Phenanthrene	0.18	J	0.35	0.052	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Phenol	ND		1.2	0.19	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
Pyrene	0.14	J	0.35	0.050	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20
3 & 4 Methylphenol	ND		9.3	0.68	mg/Kg	✳	03/22/23 08:13	03/24/23 12:41	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	83		46 - 137	03/22/23 08:13	03/24/23 12:41	20
Phenol-d5 (Surr)	47		26 - 120	03/22/23 08:13	03/24/23 12:41	20
Nitrobenzene-d5 (Surr)	33		25 - 120	03/22/23 08:13	03/24/23 12:41	20
2-Fluorophenol (Surr)	38		20 - 120	03/22/23 08:13	03/24/23 12:41	20
2-Fluorobiphenyl (Surr)	50		34 - 120	03/22/23 08:13	03/24/23 12:41	20
2,4,6-Tribromophenol (Surr)	42		10 - 120	03/22/23 08:13	03/24/23 12:41	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:50	1
Barium	0.13	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:50	1
Cadmium	0.0032	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:50	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:50	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:50	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:50	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:50	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.2	0.99	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2,2-Tetrachloroethane	ND		3.2	1.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.2	0.85	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1,2-Trichloroethane	ND		3.2	0.73	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1-Dichloroethane	ND		3.2	0.61	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,1-Dichloroethene	ND		3.2	1.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2,4-Trichlorobenzene	ND		3.2	1.7	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dibromo-3-Chloropropane	ND		6.4	2.8	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Ethylene Dibromide	ND		3.2	1.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichlorobenzene	ND		3.2	1.5	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloroethane	ND		3.2	0.60	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloropropane	ND		3.2	0.47	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,3-Dichlorobenzene	ND		3.2	0.59	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
1,4-Dichlorobenzene	ND		3.2	0.70	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
2-Butanone (MEK)	ND		13	2.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
2-Hexanone	ND		13	3.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
4-Methyl-2-pentanone (MIBK)	ND		13	3.0	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Acetone	ND		13	3.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Benzene	ND		3.2	0.53	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Dichlorobromomethane	ND		3.2	0.77	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Bromoform	ND		3.2	2.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Bromomethane	ND		3.2	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Carbon disulfide	ND		3.2	1.4	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Carbon tetrachloride	ND		3.2	1.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chlorobenzene	ND		3.2	0.45	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloroethane	ND		3.2	1.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloroform	ND		3.2	0.69	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chloromethane	ND		3.2	0.84	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
cis-1,2-Dichloroethene	ND		3.2	0.51	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
cis-1,3-Dichloropropene	ND		3.2	1.6	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Cyclohexane	ND		6.4	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Chlorodibromomethane	ND		3.2	1.5	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Dichlorodifluoromethane	ND		3.2	0.67	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Ethylbenzene	ND		3.2	0.60	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Isopropylbenzene	ND		3.2	0.48	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methyl acetate	ND		16	2.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methyl tert-butyl ether	ND		3.2	0.47	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methylcyclohexane	ND		6.4	0.84	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Methylene Chloride	ND		6.4	4.9	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Styrene	ND		3.2	0.66	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Tetrachloroethene	ND		3.2	1.2	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Toluene	ND		3.2	3.1	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
trans-1,2-Dichloroethene	ND		3.2	0.79	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
trans-1,3-Dichloropropene	ND		3.2	1.3	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Trichloroethene	ND		3.2	1.8	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Trichlorofluoromethane	ND		3.2	1.7	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Vinyl chloride	8.2		3.2	1.6	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10
Xylenes, Total	ND		6.4	1.2	mg/Kg	✱	03/20/23 14:08	03/22/23 05:06	10

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	82		56 - 125	03/20/23 14:08	03/22/23 05:06	10
Dibromofluoromethane (Surr)	76		41 - 138	03/20/23 14:08	03/22/23 05:06	10
4-Bromofluorobenzene (Surr)	80		41 - 143	03/20/23 14:08	03/22/23 05:06	10
1,2-Dichloroethane-d4 (Surr)	83		58 - 125	03/20/23 14:08	03/22/23 05:06	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
bis (2-chloroisopropyl) ether	ND		6.0	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4,5-Trichlorophenol	ND		9.0	4.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4,6-Trichlorophenol	ND		9.0	3.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dichlorophenol	ND		9.0	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dimethylphenol	ND		9.0	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dinitrophenol	ND		20	8.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,4-Dinitrotoluene	ND		12	3.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Chloronaphthalene	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Chlorophenol	ND		3.0	0.60	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Methylnaphthalene	0.26	J	0.90	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Methylphenol	ND		12	1.9	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Nitroaniline	ND		12	2.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
2-Nitrophenol	ND		3.0	0.78	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
3,3'-Dichlorobenzidine	ND		6.0	2.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
3-Nitroaniline	ND		12	3.0	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Bromophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chloro-3-methylphenol	ND		9.0	2.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chloroaniline	ND		9.0	1.8	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Chlorophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Nitroaniline	ND		12	3.6	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
4-Nitrophenol	ND		20	5.7	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acenaphthene	ND		0.90	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acenaphthylene	ND		0.90	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Acetophenone	ND		6.0	0.66	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Anthracene	ND		0.90	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Atrazine	ND		12	2.2	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzaldehyde	ND		6.0	1.4	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[a]anthracene	1.2		0.90	0.21	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[a]pyrene	1.4		0.90	0.56	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[b]fluoranthene	1.8		0.90	0.39	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[g,h,i]perylene	1.1		0.90	0.43	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Benzo[k]fluoranthene	0.81	J	0.90	0.42	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-chloroethoxy)methane	ND		6.0	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-chloroethyl)ether	ND		6.0	0.72	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Bis(2-ethylhexyl) phthalate	ND		4.2	3.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Caprolactam	ND		20	4.5	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Carbazole	ND		3.0	1.1	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Chrysene	1.3		0.90	0.090	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50
Dibenz(a,h)anthracene	ND		0.90	0.42	mg/Kg	☆	03/22/23 08:13	03/24/23 12:19	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		3.0	0.78	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Diethyl phthalate	ND		4.2	1.9	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Dimethyl phthalate	ND		4.2	0.84	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Di-n-butyl phthalate	ND		4.2	3.0	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Fluoranthene	1.8		0.90	0.27	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Fluorene	ND		0.90	0.17	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorobenzene	ND		0.90	0.17	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorobutadiene	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachlorocyclopentadiene	ND		20	3.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Hexachloroethane	ND		3.0	0.54	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Indeno[1,2,3-cd]pyrene	1.0		0.90	0.44	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Isophorone	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
N-Nitrosodi-n-propylamine	ND		3.0	0.66	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
N-Nitrosodiphenylamine	ND		3.0	0.72	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Naphthalene	0.20	J	0.90	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Nitrobenzene	ND		6.0	0.78	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Pentachlorophenol	ND		9.0	3.5	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Phenanthrene	0.69	J	0.90	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Phenol	ND		3.0	0.48	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
Pyrene	1.9		0.90	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50
3 & 4 Methylphenol	ND		24	1.7	mg/Kg	✱	03/22/23 08:13	03/24/23 12:19	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	03/22/23 08:13	03/24/23 12:19	50
Phenol-d5 (Surr)	69		26 - 120	03/22/23 08:13	03/24/23 12:19	50
Nitrobenzene-d5 (Surr)	51		25 - 120	03/22/23 08:13	03/24/23 12:19	50
2-Fluorophenol (Surr)	54		20 - 120	03/22/23 08:13	03/24/23 12:19	50
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 12:19	50
2,4,6-Tribromophenol (Surr)	61		10 - 120	03/22/23 08:13	03/24/23 12:19	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:55	1
Barium	1.0	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:55	1
Cadmium	0.00096	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:55	1
Chromium	0.0040	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:55	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:55	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:55	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:55	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.3		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	16.7		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2,2-Tetrachloroethane	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0055	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1,2-Trichloroethane	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1-Dichloroethane	ND		0.0055	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,1-Dichloroethene	ND		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2,4-Trichlorobenzene	ND		0.0055	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Ethylene Dibromide	ND		0.0055	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichlorobenzene	ND		0.0055	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloroethane	ND		0.0055	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloropropane	ND		0.0055	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,3-Dichlorobenzene	ND		0.0055	0.00091	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
1,4-Dichlorobenzene	ND		0.0055	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
2-Butanone (MEK)	0.0065	J	0.022	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
2-Hexanone	ND		0.022	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
4-Methyl-2-pentanone (MIBK)	ND		0.022	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Acetone	0.047	B	0.028	0.023	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Benzene	ND		0.0055	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Dichlorobromomethane	ND		0.0055	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Bromoform	ND		0.0055	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Bromomethane	ND		0.0055	0.0046	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Carbon disulfide	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Carbon tetrachloride	ND		0.0055	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chlorobenzene	ND		0.0055	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloroethane	ND		0.0055	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloroform	ND		0.0055	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chloromethane	ND		0.0055	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
cis-1,2-Dichloroethene	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
cis-1,3-Dichloropropene	ND		0.0055	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Chlorodibromomethane	ND		0.0055	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Dichlorodifluoromethane	ND		0.0055	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Ethylbenzene	ND		0.0055	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Isopropylbenzene	ND		0.0055	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methyl acetate	ND		0.028	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methyl tert-butyl ether	ND		0.0055	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methylcyclohexane	ND		0.011	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Methylene Chloride	ND		0.028	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Styrene	ND		0.0055	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Tetrachloroethene	ND		0.0055	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Toluene	ND		0.0055	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
trans-1,2-Dichloroethene	ND		0.0055	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
trans-1,3-Dichloropropene	ND		0.0055	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Trichloroethene	ND		0.0055	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Trichlorofluoromethane	ND		0.0055	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Vinyl chloride	0.014		0.0055	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1
Xylenes, Total	ND		0.011	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 21:31	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	128	S1+	56 - 125	03/19/23 13:00	03/21/23 21:31	1
Dibromofluoromethane (Surr)	108		41 - 138	03/19/23 13:00	03/21/23 21:31	1
4-Bromofluorobenzene (Surr)	138		41 - 143	03/19/23 13:00	03/21/23 21:31	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/19/23 13:00	03/21/23 21:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.25	0.085	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
bis (2-chloroisopropyl) ether	ND		0.50	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4,5-Trichlorophenol	ND		0.75	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4,6-Trichlorophenol	ND		0.75	0.32	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dichlorophenol	ND		0.75	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dimethylphenol	ND		0.75	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dinitrophenol	ND		1.6	0.71	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,4-Dinitrotoluene	ND		1.0	0.31	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2,6-Dinitrotoluene	ND		1.0	0.28	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Chloronaphthalene	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Chlorophenol	ND		0.25	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Methylnaphthalene	0.13		0.075	0.0098	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Methylphenol	ND		1.0	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Nitroaniline	ND		1.0	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
2-Nitrophenol	ND		0.25	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
3,3'-Dichlorobenzidine	ND		0.50	0.21	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
3-Nitroaniline	ND		1.0	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4,6-Dinitro-2-methylphenol	ND		1.6	0.40	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Bromophenyl phenyl ether	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chloro-3-methylphenol	ND		0.75	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chloroaniline	ND		0.75	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Chlorophenyl phenyl ether	ND		0.25	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Nitroaniline	ND		1.0	0.30	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
4-Nitrophenol	ND		1.6	0.47	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acenaphthene	ND		0.075	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acenaphthylene	ND		0.075	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Acetophenone	ND		0.50	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Anthracene	0.017	J	0.075	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Atrazine	ND		1.0	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzaldehyde	ND		0.50	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[a]anthracene	0.073	J	0.075	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[a]pyrene	0.070	J	0.075	0.047	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[b]fluoranthene	0.096		0.075	0.032	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[g,h,i]perylene	0.061	J	0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Benzo[k]fluoranthene	0.063	J	0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-chloroethoxy)methane	ND		0.50	0.060	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-chloroethyl)ether	ND		0.50	0.060	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Bis(2-ethylhexyl) phthalate	ND		0.35	0.25	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Butyl benzyl phthalate	ND		0.35	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Caprolactam	ND		1.6	0.37	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Carbazole	ND		0.25	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Chrysene	0.096		0.075	0.0074	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4
Dibenz(a,h)anthracene	ND		0.075	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:27	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.068	J	0.25	0.065	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Diethyl phthalate	ND		0.35	0.15	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Dimethyl phthalate	ND		0.35	0.070	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Di-n-butyl phthalate	ND		0.35	0.25	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Di-n-octyl phthalate	ND		0.35	0.14	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Fluoranthene	0.13		0.075	0.022	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Fluorene	ND		0.075	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorobenzene	ND		0.075	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorobutadiene	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachlorocyclopentadiene	ND		1.6	0.31	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Hexachloroethane	ND		0.25	0.045	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Indeno[1,2,3-cd]pyrene	0.064	J	0.075	0.037	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Isophorone	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
N-Nitrosodi-n-propylamine	ND		0.25	0.055	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
N-Nitrosodiphenylamine	ND		0.25	0.060	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Naphthalene	0.073	J	0.075	0.012	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Nitrobenzene	ND		0.50	0.065	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Pentachlorophenol	ND		0.75	0.29	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Phenanthrene	0.16		0.075	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Phenol	ND		0.25	0.040	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
Pyrene	0.13		0.075	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4
3 & 4 Methylphenol	ND		2.0	0.14	mg/Kg	✳	03/22/23 08:13	03/24/23 13:27	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	107		46 - 137	03/22/23 08:13	03/24/23 13:27	4
Phenol-d5 (Surr)	65		26 - 120	03/22/23 08:13	03/24/23 13:27	4
Nitrobenzene-d5 (Surr)	48		25 - 120	03/22/23 08:13	03/24/23 13:27	4
2-Fluorophenol (Surr)	54		20 - 120	03/22/23 08:13	03/24/23 13:27	4
2-Fluorobiphenyl (Surr)	77		34 - 120	03/22/23 08:13	03/24/23 13:27	4
2,4,6-Tribromophenol (Surr)	98		10 - 120	03/22/23 08:13	03/24/23 13:27	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.016	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:59	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:59	1
Cadmium	0.00088	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:59	1
Chromium	0.0060	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:59	1
Lead	0.0052	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:59	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:59	1
Silver	0.0013	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:59	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	20.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2,2-Tetrachloroethane	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0053	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1,2-Trichloroethane	ND	+	0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1-Dichloroethane	ND		0.0053	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,1-Dichloroethene	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2,4-Trichlorobenzene	ND		0.0053	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Ethylene Dibromide	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichlorobenzene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloroethane	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloropropane	ND		0.0053	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,3-Dichlorobenzene	ND		0.0053	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
1,4-Dichlorobenzene	ND		0.0053	0.00093	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
2-Butanone (MEK)	0.0091	J	0.021	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
2-Hexanone	ND		0.021	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
4-Methyl-2-pentanone (MIBK)	ND		0.021	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Acetone	0.047		0.026	0.022	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Benzene	ND		0.0053	0.00074	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Dichlorobromomethane	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Bromoform	ND		0.0053	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Bromomethane	ND		0.0053	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Carbon disulfide	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Carbon tetrachloride	ND		0.0053	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chlorobenzene	ND		0.0053	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloroethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloroform	ND		0.0053	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chloromethane	ND		0.0053	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
cis-1,2-Dichloroethene	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
cis-1,3-Dichloropropene	ND		0.0053	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Chlorodibromomethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Dichlorodifluoromethane	ND		0.0053	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Ethylbenzene	ND		0.0053	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Isopropylbenzene	ND		0.0053	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methyl acetate	ND		0.026	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methyl tert-butyl ether	ND		0.0053	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methylcyclohexane	ND		0.011	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Methylene Chloride	ND		0.026	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Styrene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Tetrachloroethene	ND		0.0053	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Toluene	ND	+	0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
trans-1,2-Dichloroethene	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
trans-1,3-Dichloropropene	ND		0.0053	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Trichloroethene	ND		0.0053	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Trichlorofluoromethane	ND		0.0053	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Vinyl chloride	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1
Xylenes, Total	ND	+	0.011	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:09	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	86		56 - 125	03/19/23 13:00	03/21/23 11:09	1
Dibromofluoromethane (Surr)	86		41 - 138	03/19/23 13:00	03/21/23 11:09	1
4-Bromofluorobenzene (Surr)	69		41 - 143	03/19/23 13:00	03/21/23 11:09	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/19/23 13:00	03/21/23 11:09	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.13	0.043	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
bis (2-chloroisopropyl) ether	ND		0.26	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4,5-Trichlorophenol	ND		0.38	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4,6-Trichlorophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dichlorophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dimethylphenol	ND		0.38	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dinitrophenol	ND		0.84	0.36	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,4-Dinitrotoluene	ND		0.51	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2,6-Dinitrotoluene	ND		0.51	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Chloronaphthalene	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Chlorophenol	ND		0.13	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Methylnaphthalene	0.039		0.038	0.0050	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Methylphenol	ND		0.51	0.079	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Nitroaniline	ND		0.51	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
2-Nitrophenol	ND		0.13	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
3,3'-Dichlorobenzidine	ND		0.26	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
3-Nitroaniline	ND		0.51	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4,6-Dinitro-2-methylphenol	ND		0.84	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Bromophenyl phenyl ether	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chloro-3-methylphenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chloroaniline	ND		0.38	0.077	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Chlorophenyl phenyl ether	ND		0.13	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Nitroaniline	ND		0.51	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
4-Nitrophenol	ND		0.84	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acenaphthene	ND		0.038	0.0073	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acenaphthylene	ND		0.038	0.010	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Acetophenone	ND		0.26	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Anthracene	0.013	J	0.038	0.0062	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Atrazine	ND		0.51	0.092	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzaldehyde	ND		0.26	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[a]anthracene	0.028	J	0.038	0.0087	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[a]pyrene	0.024	J	0.038	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[b]fluoranthene	0.044		0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[g,h,i]perylene	0.024	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Benzo[k]fluoranthene	0.021	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-chloroethoxy)methane	ND		0.26	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-chloroethyl)ether	ND		0.26	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Bis(2-ethylhexyl) phthalate	ND		0.18	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Butyl benzyl phthalate	ND		0.18	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Caprolactam	ND		0.84	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Carbazole	ND		0.13	0.049	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Chrysene	0.030	J	0.038	0.0038	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2
Dibenz(a,h)anthracene	ND		0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:13	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.13	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Diethyl phthalate	ND		0.18	0.079	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Dimethyl phthalate	ND		0.18	0.036	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Di-n-butyl phthalate	ND		0.18	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Di-n-octyl phthalate	ND		0.18	0.072	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Fluoranthene	0.060		0.038	0.011	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Fluorene	ND		0.038	0.0070	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorobenzene	ND		0.038	0.0073	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorobutadiene	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachlorocyclopentadiene	ND		0.84	0.16	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Hexachloroethane	ND		0.13	0.023	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Indeno[1,2,3-cd]pyrene	0.025	J	0.038	0.019	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Isophorone	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
N-Nitrosodi-n-propylamine	ND		0.13	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
N-Nitrosodiphenylamine	ND		0.13	0.031	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Naphthalene	0.025	J	0.038	0.0062	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Nitrobenzene	ND		0.26	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Pentachlorophenol	ND		0.38	0.15	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Phenanthrene	0.063		0.038	0.0057	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Phenol	ND		0.13	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
Pyrene	0.057		0.038	0.0055	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2
3 & 4 Methylphenol	ND		1.0	0.074	mg/Kg	✱	03/22/23 08:13	03/24/23 14:13	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 14:13	2
Phenol-d5 (Surr)	59		26 - 120	03/22/23 08:13	03/24/23 14:13	2
Nitrobenzene-d5 (Surr)	46		25 - 120	03/22/23 08:13	03/24/23 14:13	2
2-Fluorophenol (Surr)	53		20 - 120	03/22/23 08:13	03/24/23 14:13	2
2-Fluorobiphenyl (Surr)	64		34 - 120	03/22/23 08:13	03/24/23 14:13	2
2,4,6-Tribromophenol (Surr)	79		10 - 120	03/22/23 08:13	03/24/23 14:13	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:04	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:04	1
Cadmium	0.00097	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:04	1
Chromium	0.0045	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:04	1
Lead	0.0061	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:04	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:04	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:04	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.9		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.1		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0060	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2,2-Tetrachloroethane	ND		0.0060	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0060	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1,2-Trichloroethane	ND	+	0.0060	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1-Dichloroethane	ND		0.0060	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,1-Dichloroethene	ND		0.0060	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2,4-Trichlorobenzene	ND		0.0060	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dibromo-3-Chloropropane	ND		0.012	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Ethylene Dibromide	ND		0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichlorobenzene	ND		0.0060	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloroethane	ND		0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloropropane	ND		0.0060	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,3-Dichlorobenzene	ND		0.0060	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
1,4-Dichlorobenzene	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
2-Butanone (MEK)	0.019	J	0.024	0.0042	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
2-Hexanone	ND		0.024	0.0049	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
4-Methyl-2-pentanone (MIBK)	ND		0.024	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Acetone	0.087		0.030	0.025	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Benzene	ND		0.0060	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Dichlorobromomethane	ND		0.0060	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Bromoform	ND		0.0060	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Bromomethane	ND		0.0060	0.0049	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Carbon disulfide	ND		0.0060	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Carbon tetrachloride	ND		0.0060	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chlorobenzene	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloroethane	ND		0.0060	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloroform	ND		0.0060	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chloromethane	ND		0.0060	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
cis-1,2-Dichloroethene	ND		0.0060	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
cis-1,3-Dichloropropene	ND		0.0060	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Cyclohexane	ND		0.012	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Chlorodibromomethane	ND		0.0060	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Dichlorodifluoromethane	ND		0.0060	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Ethylbenzene	ND		0.0060	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Isopropylbenzene	ND		0.0060	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methyl acetate	ND		0.030	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methyl tert-butyl ether	ND		0.0060	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methylcyclohexane	ND		0.012	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Methylene Chloride	ND		0.030	0.014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Styrene	ND		0.0060	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Tetrachloroethene	ND		0.0060	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Toluene	ND	+	0.0060	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
trans-1,2-Dichloroethene	ND		0.0060	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
trans-1,3-Dichloropropene	ND		0.0060	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Trichloroethene	ND		0.0060	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Trichlorofluoromethane	ND		0.0060	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Vinyl chloride	ND		0.0060	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1
Xylenes, Total	ND	+	0.012	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 11:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/19/23 13:00	03/21/23 11:30	1
Dibromofluoromethane (Surr)	83		41 - 138	03/19/23 13:00	03/21/23 11:30	1
4-Bromofluorobenzene (Surr)	73		41 - 143	03/19/23 13:00	03/21/23 11:30	1
1,2-Dichloroethane-d4 (Surr)	92		58 - 125	03/19/23 13:00	03/21/23 11:30	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.065	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4,5-Trichlorophenol	ND		0.19	0.089	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4,6-Trichlorophenol	ND		0.19	0.083	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dichlorophenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dimethylphenol	ND		0.19	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dinitrophenol	ND		0.43	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,4-Dinitrotoluene	ND		0.26	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2,6-Dinitrotoluene	ND		0.26	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Chloronaphthalene	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Chlorophenol	ND		0.065	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Methylphenol	ND		0.26	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Nitroaniline	ND		0.26	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
2-Nitrophenol	ND		0.065	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
3,3'-Dichlorobenzidine	ND		0.13	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
3-Nitroaniline	ND		0.26	0.064	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4,6-Dinitro-2-methylphenol	ND		0.43	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Bromophenyl phenyl ether	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chloro-3-methylphenol	ND		0.19	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chloroaniline	ND		0.19	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Chlorophenyl phenyl ether	ND		0.065	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Nitroaniline	ND		0.26	0.078	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
4-Nitrophenol	ND		0.43	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acenaphthene	ND		0.019	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acenaphthylene	ND		0.019	0.0052	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Anthracene	0.0072	J	0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Atrazine	ND		0.26	0.047	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzaldehyde	ND		0.13	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[a]anthracene	0.022		0.019	0.0044	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[a]pyrene	0.020		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[b]fluoranthene	0.032		0.019	0.0084	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[g,h,i]perylene	0.022		0.019	0.0092	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Benzo[k]fluoranthene	0.014	J	0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-chloroethoxy)methane	ND		0.13	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-chloroethyl)ether	ND		0.13	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Bis(2-ethylhexyl) phthalate	ND		0.091	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Butyl benzyl phthalate	ND		0.091	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Caprolactam	ND		0.43	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Carbazole	ND		0.065	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Chrysene	0.024		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1
Dibenz(a,h)anthracene	0.010	J	0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:07	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.022	J	0.065	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Diethyl phthalate	ND		0.091	0.040	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Dimethyl phthalate	ND		0.091	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Di-n-butyl phthalate	ND		0.091	0.066	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Di-n-octyl phthalate	ND		0.091	0.036	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Fluoranthene	0.040		0.019	0.0058	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Fluorene	0.0058	J	0.019	0.0036	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Hexachlorobenzene	ND		0.019	0.0037	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Hexachlorobutadiene	ND		0.065	0.016	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Hexachlorocyclopentadiene	ND		0.43	0.080	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Hexachloroethane	ND		0.065	0.012	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Indeno[1,2,3-cd]pyrene	0.017	J	0.019	0.0095	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Isophorone	ND		0.065	0.016	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
N-Nitrosodi-n-propylamine	ND		0.065	0.014	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
N-Nitrosodiphenylamine	ND		0.065	0.016	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Naphthalene	0.024		0.019	0.0031	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Nitrobenzene	ND		0.13	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Pentachlorophenol	ND		0.19	0.075	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Phenanthrene	0.055		0.019	0.0029	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Phenol	ND		0.065	0.010	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
Pyrene	0.043		0.019	0.0028	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1
3 & 4 Methylphenol	ND		0.52	0.038	mg/Kg	✱	03/22/23 08:13	03/24/23 16:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 16:07	1
Phenol-d5 (Surr)	50		26 - 120	03/22/23 08:13	03/24/23 16:07	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 16:07	1
2-Fluorophenol (Surr)	48		20 - 120	03/22/23 08:13	03/24/23 16:07	1
2-Fluorobiphenyl (Surr)	54		34 - 120	03/22/23 08:13	03/24/23 16:07	1
2,4,6-Tribromophenol (Surr)	87		10 - 120	03/22/23 08:13	03/24/23 16:07	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:08	1
Barium	1.1	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:08	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:08	1
Chromium	0.0054	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:08	1
Lead	0.0057	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:08	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:08	1
Silver	0.0029	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:08	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	76.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	24.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2,2-Tetrachloroethane	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0053	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1,2-Trichloroethane	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1-Dichloroethane	ND		0.0053	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,1-Dichloroethene	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2,4-Trichlorobenzene	ND		0.0053	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Ethylene Dibromide	ND		0.0053	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichlorobenzene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloroethane	ND		0.0053	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloropropane	ND		0.0053	0.00090	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,3-Dichlorobenzene	ND		0.0053	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
1,4-Dichlorobenzene	ND		0.0053	0.00093	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
2-Butanone (MEK)	ND		0.021	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
2-Hexanone	ND		0.021	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.021	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Acetone	0.047	B	0.026	0.022	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Benzene	ND		0.0053	0.00074	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Dichlorobromomethane	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Bromoform	ND		0.0053	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Bromomethane	ND		0.0053	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Carbon disulfide	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Carbon tetrachloride	ND		0.0053	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chlorobenzene	ND		0.0053	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloroethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloroform	ND		0.0053	0.00083	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chloromethane	ND		0.0053	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
cis-1,2-Dichloroethene	ND		0.0053	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
cis-1,3-Dichloropropene	ND		0.0053	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Cyclohexane	ND		0.011	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Chlorodibromomethane	ND		0.0053	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Dichlorodifluoromethane	ND		0.0053	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Ethylbenzene	ND		0.0053	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Isopropylbenzene	ND		0.0053	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methyl acetate	ND		0.026	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methyl tert-butyl ether	ND		0.0053	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methylcyclohexane	ND		0.011	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Methylene Chloride	ND		0.026	0.013	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Styrene	ND		0.0053	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Tetrachloroethene	ND		0.0053	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Toluene	ND		0.0053	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
trans-1,2-Dichloroethene	ND		0.0053	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
trans-1,3-Dichloropropene	ND		0.0053	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Trichloroethene	ND		0.0053	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Trichlorofluoromethane	ND		0.0053	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Vinyl chloride	ND		0.0053	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1
Xylenes, Total	ND		0.011	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 21:57	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	121		56 - 125	03/19/23 13:00	03/21/23 21:57	1
Dibromofluoromethane (Surr)	105		41 - 138	03/19/23 13:00	03/21/23 21:57	1
4-Bromofluorobenzene (Surr)	126		41 - 143	03/19/23 13:00	03/21/23 21:57	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/19/23 13:00	03/21/23 21:57	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.064	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4,5-Trichlorophenol	ND		0.19	0.089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4,6-Trichlorophenol	ND		0.19	0.082	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dichlorophenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dimethylphenol	ND		0.19	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dinitrophenol	ND		0.42	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,4-Dinitrotoluene	ND		0.26	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2,6-Dinitrotoluene	ND		0.26	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Chloronaphthalene	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Chlorophenol	ND		0.064	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Methylnaphthalene	ND		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Methylphenol	ND		0.26	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Nitroaniline	ND		0.26	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
2-Nitrophenol	ND		0.064	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
3,3'-Dichlorobenzidine	ND		0.13	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
3-Nitroaniline	ND		0.26	0.063	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4,6-Dinitro-2-methylphenol	ND		0.42	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Bromophenyl phenyl ether	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chloro-3-methylphenol	ND		0.19	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chloroaniline	ND		0.19	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Chlorophenyl phenyl ether	ND		0.064	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Nitroaniline	ND		0.26	0.077	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
4-Nitrophenol	ND		0.42	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acenaphthene	ND		0.019	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acenaphthylene	ND		0.019	0.0052	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Anthracene	ND		0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Atrazine	ND		0.26	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzaldehyde	ND		0.13	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[a]anthracene	ND		0.019	0.0044	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[a]pyrene	ND		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[b]fluoranthene	ND		0.019	0.0084	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[g,h,i]perylene	ND		0.019	0.0091	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Benzo[k]fluoranthene	ND		0.019	0.0089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-chloroethoxy)methane	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-chloroethyl)ether	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Bis(2-ethylhexyl) phthalate	ND		0.090	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Butyl benzyl phthalate	ND		0.090	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Caprolactam	ND		0.42	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Carbazole	ND		0.064	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Chrysene	ND		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1
Dibenz(a,h)anthracene	ND		0.019	0.0089	mg/Kg	☆	03/22/23 08:13	03/24/23 14:35	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.064	0.017	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Diethyl phthalate	ND		0.090	0.040	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Dimethyl phthalate	ND		0.090	0.018	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Di-n-butyl phthalate	ND		0.090	0.065	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Di-n-octyl phthalate	ND		0.090	0.036	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Fluoranthene	ND		0.019	0.0057	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Fluorene	ND		0.019	0.0035	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Hexachlorobenzene	ND		0.019	0.0037	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Hexachlorobutadiene	ND		0.064	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Hexachlorocyclopentadiene	ND		0.42	0.080	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Hexachloroethane	ND		0.064	0.012	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Indeno[1,2,3-cd]pyrene	ND		0.019	0.0095	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Isophorone	ND		0.064	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
N-Nitrosodi-n-propylamine	ND		0.064	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
N-Nitrosodiphenylamine	ND		0.064	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Naphthalene	ND		0.019	0.0031	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Nitrobenzene	ND		0.13	0.017	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Pentachlorophenol	ND		0.19	0.075	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Phenanthrene	ND		0.019	0.0029	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Phenol	ND		0.064	0.010	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
Pyrene	ND		0.019	0.0028	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1
3 & 4 Methylphenol	ND		0.52	0.037	mg/Kg	✳	03/22/23 08:13	03/24/23 14:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	95		46 - 137	03/22/23 08:13	03/24/23 14:35	1
Phenol-d5 (Surr)	51		26 - 120	03/22/23 08:13	03/24/23 14:35	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 14:35	1
2-Fluorophenol (Surr)	49		20 - 120	03/22/23 08:13	03/24/23 14:35	1
2-Fluorobiphenyl (Surr)	48		34 - 120	03/22/23 08:13	03/24/23 14:35	1
2,4,6-Tribromophenol (Surr)	68		10 - 120	03/22/23 08:13	03/24/23 14:35	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:21	1
Barium	0.88	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:21	1
Cadmium	0.0015	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:21	1
Chromium	0.0063	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:21	1
Lead	0.0043	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:21	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:21	1
Silver	0.0021	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:21	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.0		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.0		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1,2-Trichloroethane	ND	+	0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1-Dichloroethane	ND		0.0050	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Ethylene Dibromide	ND		0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloroethane	ND		0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloropropane	ND		0.0050	0.00086	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
1,4-Dichlorobenzene	ND		0.0050	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
2-Butanone (MEK)	0.0051	J	0.020	0.0036	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
2-Hexanone	ND		0.020	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Acetone	0.028		0.025	0.021	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Benzene	ND		0.0050	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Bromoform	ND		0.0050	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Bromomethane	ND		0.0050	0.0042	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloroethane	ND		0.0050	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloroform	ND		0.0050	0.00079	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chloromethane	ND		0.0050	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Cyclohexane	ND		0.010	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Dichlorodifluoromethane	ND		0.0050	0.00095	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Ethylbenzene	ND		0.0050	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methyl acetate	ND		0.025	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Methylene Chloride	ND		0.025	0.012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Styrene	ND		0.0050	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Toluene	ND	+	0.0050	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Trichloroethene	ND		0.0050	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Vinyl chloride	0.0027	J	0.0050	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1
Xylenes, Total	ND	+	0.010	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 12:13	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/19/23 13:00	03/21/23 12:13	1
Dibromofluoromethane (Surr)	89		41 - 138	03/19/23 13:00	03/21/23 12:13	1
4-Bromofluorobenzene (Surr)	73		41 - 143	03/19/23 13:00	03/21/23 12:13	1
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	03/19/23 13:00	03/21/23 12:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.13	0.043	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
bis (2-chloroisopropyl) ether	ND		0.25	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4,5-Trichlorophenol	ND		0.38	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4,6-Trichlorophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dichlorophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dimethylphenol	ND		0.38	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dinitrophenol	ND		0.83	0.36	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,4-Dinitrotoluene	ND		0.50	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2,6-Dinitrotoluene	ND		0.50	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Chloronaphthalene	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Chlorophenol	ND		0.13	0.025	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Methylnaphthalene	0.069		0.038	0.0049	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Methylphenol	ND		0.50	0.078	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Nitroaniline	ND		0.50	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
2-Nitrophenol	ND		0.13	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
3,3'-Dichlorobenzidine	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
3-Nitroaniline	ND		0.50	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4,6-Dinitro-2-methylphenol	ND		0.83	0.20	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Bromophenyl phenyl ether	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chloro-3-methylphenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chloroaniline	ND		0.38	0.075	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Chlorophenyl phenyl ether	ND		0.13	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Nitroaniline	ND		0.50	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
4-Nitrophenol	ND		0.83	0.24	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acenaphthene	0.010	J	0.038	0.0072	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acenaphthylene	ND		0.038	0.010	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Acetophenone	ND		0.25	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Anthracene	0.012	J	0.038	0.0061	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Atrazine	ND		0.50	0.090	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzaldehyde	ND		0.25	0.058	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[a]anthracene	0.035	J	0.038	0.0086	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[a]pyrene	0.030	J	0.038	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[b]fluoranthene	0.047		0.038	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[g,h,i]perylene	0.028	J	0.038	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Benzo[k]fluoranthene	0.026	J	0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-chloroethoxy)methane	ND		0.25	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-chloroethyl)ether	ND		0.25	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Bis(2-ethylhexyl) phthalate	ND		0.18	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Butyl benzyl phthalate	ND		0.18	0.055	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Caprolactam	ND		0.83	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Carbazole	ND		0.13	0.048	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Chrysene	0.070		0.038	0.0037	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2
Dibenz(a,h)anthracene	0.018	J	0.038	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 13:50	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.13	0.033	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Diethyl phthalate	ND		0.18	0.078	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Dimethyl phthalate	ND		0.18	0.035	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Di-n-butyl phthalate	ND		0.18	0.13	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Di-n-octyl phthalate	ND		0.18	0.070	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Fluoranthene	0.060		0.038	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Fluorene	0.0092	J	0.038	0.0069	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Hexachlorobenzene	ND		0.038	0.0072	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Hexachlorobutadiene	ND		0.13	0.030	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Hexachlorocyclopentadiene	ND		0.83	0.16	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Hexachloroethane	ND		0.13	0.023	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Indeno[1,2,3-cd]pyrene	0.028	J	0.038	0.018	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Isophorone	ND		0.13	0.030	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
N-Nitrosodi-n-propylamine	ND		0.13	0.028	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
N-Nitrosodiphenylamine	ND		0.13	0.030	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Naphthalene	0.040		0.038	0.0061	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Nitrobenzene	ND		0.25	0.033	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Pentachlorophenol	ND		0.38	0.15	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Phenanthrene	0.091		0.038	0.0056	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Phenol	ND		0.13	0.020	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
Pyrene	0.062		0.038	0.0054	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2
3 & 4 Methylphenol	ND		1.0	0.073	mg/Kg	✳	03/22/23 08:13	03/24/23 13:50	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/22/23 08:13	03/24/23 13:50	2
Phenol-d5 (Surr)	78		26 - 120	03/22/23 08:13	03/24/23 13:50	2
Nitrobenzene-d5 (Surr)	66		25 - 120	03/22/23 08:13	03/24/23 13:50	2
2-Fluorophenol (Surr)	77		20 - 120	03/22/23 08:13	03/24/23 13:50	2
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 13:50	2
2,4,6-Tribromophenol (Surr)	96		10 - 120	03/22/23 08:13	03/24/23 13:50	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:25	1
Barium	0.83	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:25	1
Cadmium	0.0011	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:25	1
Chromium	0.0052	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:25	1
Lead	0.0040	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:25	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:25	1
Silver	0.0015	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	78.6		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	21.4		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2,2-Tetrachloroethane	ND		0.0061	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0061	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1,2-Trichloroethane	ND	+	0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1-Dichloroethane	ND		0.0061	0.00084	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,1-Dichloroethene	ND		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2,4-Trichlorobenzene	ND		0.0061	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dibromo-3-Chloropropane	ND		0.012	0.0044	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Ethylene Dibromide	ND		0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichlorobenzene	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloroethane	ND		0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloropropane	ND		0.0061	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,3-Dichlorobenzene	ND		0.0061	0.00099	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
1,4-Dichlorobenzene	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
2-Butanone (MEK)	0.012	J	0.024	0.0043	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
2-Hexanone	ND		0.024	0.0050	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
4-Methyl-2-pentanone (MIBK)	ND		0.024	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Acetone	0.069		0.030	0.026	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Benzene	ND		0.0061	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Dichlorobromomethane	ND		0.0061	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Bromoform	ND		0.0061	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Bromomethane	ND		0.0061	0.0051	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Carbon disulfide	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Carbon tetrachloride	ND		0.0061	0.0040	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chlorobenzene	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloroethane	ND		0.0061	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloroform	ND		0.0061	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chloromethane	ND		0.0061	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
cis-1,2-Dichloroethene	ND		0.0061	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
cis-1,3-Dichloropropene	ND		0.0061	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Cyclohexane	ND		0.012	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Chlorodibromomethane	ND		0.0061	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Dichlorodifluoromethane	ND		0.0061	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Ethylbenzene	ND		0.0061	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Isopropylbenzene	ND		0.0061	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methyl acetate	ND		0.030	0.0041	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methyl tert-butyl ether	ND		0.0061	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methylcyclohexane	ND		0.012	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Methylene Chloride	ND		0.030	0.015	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Styrene	ND		0.0061	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Tetrachloroethene	ND		0.0061	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Toluene	ND	+	0.0061	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
trans-1,2-Dichloroethene	ND		0.0061	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
trans-1,3-Dichloropropene	ND		0.0061	0.0045	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Trichloroethene	ND		0.0061	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Trichlorofluoromethane	ND		0.0061	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Vinyl chloride	0.0089		0.0061	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1
Xylenes, Total	ND	+	0.012	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 14:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	84		56 - 125	03/19/23 13:00	03/21/23 14:00	1
Dibromofluoromethane (Surr)	84		41 - 138	03/19/23 13:00	03/21/23 14:00	1
4-Bromofluorobenzene (Surr)	70		41 - 143	03/19/23 13:00	03/21/23 14:00	1
1,2-Dichloroethane-d4 (Surr)	94		58 - 125	03/19/23 13:00	03/21/23 14:00	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.063	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
bis (2-chloroisopropyl) ether	ND		0.13	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4,5-Trichlorophenol	ND		0.19	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4,6-Trichlorophenol	ND		0.19	0.081	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dichlorophenol	ND		0.19	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dimethylphenol	ND		0.19	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dinitrophenol	ND		0.42	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,4-Dinitrotoluene	ND		0.25	0.079	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2,6-Dinitrotoluene	ND		0.25	0.071	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Chloronaphthalene	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Chlorophenol	ND		0.063	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Methylnaphthalene	0.039		0.019	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Methylphenol	ND		0.25	0.039	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Nitroaniline	ND		0.25	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
2-Nitrophenol	ND		0.063	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
3,3'-Dichlorobenzidine	ND		0.13	0.054	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
3-Nitroaniline	ND		0.25	0.062	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4,6-Dinitro-2-methylphenol	ND		0.42	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Bromophenyl phenyl ether	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chloro-3-methylphenol	ND		0.19	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chloroaniline	ND		0.19	0.038	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Chlorophenyl phenyl ether	ND		0.063	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Nitroaniline	ND		0.25	0.076	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
4-Nitrophenol	ND		0.42	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acenaphthene	0.0057	J	0.019	0.0036	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acenaphthylene	ND		0.019	0.0051	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Acetophenone	ND		0.13	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Anthracene	0.0086	J	0.019	0.0031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Atrazine	ND		0.25	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzaldehyde	ND		0.13	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[a]anthracene	0.032		0.019	0.0043	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[a]pyrene	0.028		0.019	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[b]fluoranthene	0.044		0.019	0.0082	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[g,h,i]perylene	0.024		0.019	0.0090	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Benzo[k]fluoranthene	0.018	J	0.019	0.0088	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-chloroethoxy)methane	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-chloroethyl)ether	ND		0.13	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Bis(2-ethylhexyl) phthalate	ND		0.089	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Butyl benzyl phthalate	ND		0.089	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Caprolactam	ND		0.42	0.095	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Carbazole	ND		0.063	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Chrysene	0.032		0.019	0.0019	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1
Dibenz(a,h)anthracene	0.011	J	0.019	0.0088	mg/Kg	☆	03/22/23 08:13	03/24/23 16:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.024	J	0.063	0.016	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Diethyl phthalate	ND		0.089	0.039	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Dimethyl phthalate	ND		0.089	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Di-n-butyl phthalate	ND		0.089	0.064	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Di-n-octyl phthalate	ND		0.089	0.035	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Fluoranthene	0.054		0.019	0.0056	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Fluorene	0.0061	J	0.019	0.0035	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Hexachlorobenzene	ND		0.019	0.0036	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Hexachlorobutadiene	ND		0.063	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Hexachlorocyclopentadiene	ND		0.42	0.079	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Hexachloroethane	ND		0.063	0.011	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Indeno[1,2,3-cd]pyrene	0.021		0.019	0.0093	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Isophorone	ND		0.063	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
N-Nitrosodi-n-propylamine	ND		0.063	0.014	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
N-Nitrosodiphenylamine	ND		0.063	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Naphthalene	0.024		0.019	0.0031	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Nitrobenzene	ND		0.13	0.016	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Pentachlorophenol	ND		0.19	0.073	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Phenanthrene	0.067		0.019	0.0028	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Phenol	ND		0.063	0.010	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
Pyrene	0.055		0.019	0.0027	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1
3 & 4 Methylphenol	ND		0.51	0.037	mg/Kg	✱	03/22/23 08:13	03/24/23 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		46 - 137	03/22/23 08:13	03/24/23 16:30	1
Phenol-d5 (Surr)	52		26 - 120	03/22/23 08:13	03/24/23 16:30	1
Nitrobenzene-d5 (Surr)	41		25 - 120	03/22/23 08:13	03/24/23 16:30	1
2-Fluorophenol (Surr)	48		20 - 120	03/22/23 08:13	03/24/23 16:30	1
2-Fluorobiphenyl (Surr)	56		34 - 120	03/22/23 08:13	03/24/23 16:30	1
2,4,6-Tribromophenol (Surr)	90		10 - 120	03/22/23 08:13	03/24/23 16:30	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.014	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:30	1
Barium	0.99	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:30	1
Cadmium	0.0012	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:30	1
Chromium	0.0088	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:30	1
Lead	0.0041	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:30	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:30	1
Silver	0.0029	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:30	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.4		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	20.6		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 16:16	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 16:16	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 16:16	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 16:16	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 16:16	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 16:16	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:16	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:16	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 16:16	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/22/23 16:16	1
Dibromofluoromethane (Surr)	98		71 - 121		03/22/23 16:16	1
4-Bromofluorobenzene (Surr)	108		80 - 120		03/22/23 16:16	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		03/22/23 16:16	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 15:15	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 15:15	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 15:15	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 15:15	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 15:15	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 15:15	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 15:15	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137	03/21/23 12:03	03/23/23 15:15	1
Phenol-d5 (Surr)	61		26 - 120	03/21/23 12:03	03/23/23 15:15	1
Nitrobenzene-d5 (Surr)	76		24 - 120	03/21/23 12:03	03/23/23 15:15	1
2-Fluorophenol (Surr)	70		19 - 120	03/21/23 12:03	03/23/23 15:15	1
2-Fluorobiphenyl (Surr)	91		33 - 120	03/21/23 12:03	03/23/23 15:15	1
2,4,6-Tribromophenol (Surr)	114		10 - 120	03/21/23 12:03	03/23/23 15:15	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:07	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:07	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:07	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:07	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:07	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:07	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:07	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	80		10 - 145	03/21/23 12:08	03/22/23 14:07	1
DCB Decachlorobiphenyl	79		10 - 145	03/21/23 12:08	03/22/23 14:07	1
Tetrachloro-m-xylene	63		10 - 123	03/21/23 12:08	03/22/23 14:07	1
Tetrachloro-m-xylene	67		10 - 123	03/21/23 12:08	03/22/23 14:07	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		65	32	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1221	ND		65	39	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1232	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1242	ND		65	25	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1248	ND		65	22	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1254	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1260	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1262	ND		65	29	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1
Aroclor-1268	ND		65	21	ug/Kg	☆	03/21/23 08:36	03/21/23 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:42	1
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:42	1
DCB Decachlorobiphenyl	82		10 - 174	03/21/23 08:36	03/21/23 16:42	1
DCB Decachlorobiphenyl	86		10 - 174	03/21/23 08:36	03/21/23 16:42	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 08:39	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 08:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	53		26 - 136	03/23/23 21:15	03/24/23 08:39	1
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	03/23/23 21:15	03/24/23 08:39	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	27	B	6.2	0.066	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,6,7,8-HpCDF	10	B	6.2	0.021	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8-HxCDD	0.36	J B	6.2	0.021	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8-HxCDF	1.9	J B	6.2	0.040	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,4,7,8,9-HpCDF	1.3	J B	6.2	0.026	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,6,7,8-HxCDD	1.2	J B	6.2	0.020	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,6,7,8-HxCDF	1.6	J B	6.2	0.040	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8-PeCDD	0.58	J I B	6.2	0.012	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8-PeCDF	0.72	J B	6.2	0.024	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8,9-HxCDD	0.88	J B	6.2	0.020	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
1,2,3,7,8,9-HxCDF	0.42	J B	6.2	0.044	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,4,6,7,8-HxCDF	1.2	J B	6.2	0.039	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,4,7,8-PeCDF	1.6	J B	6.2	0.019	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,7,8-TCDD	0.44	J B	1.2	0.0093	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
2,3,7,8-TCDF	0.43	J I	1.2	0.022	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
OCDD	450	B	12	0.075	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1
OCDF	22	B	12	0.034	ng/Kg	☆	03/28/23 09:37	03/29/23 22:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	12	B	6.2	0.020	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HxCDF	19	B	6.2	0.041	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HpCDD	27	B	6.2	0.066	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total HpCDF	25	B	6.2	0.023	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total PeCDD	5.4	J I B	6.2	0.012	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total PeCDF	12	I B	6.2	0.021	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total TCDD	3.5	I B	1.2	0.0093	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Total TCDF	6.2	I	1.2	0.022	ng/Kg	☼	03/28/23 09:37	03/29/23 22:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	100		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-OCDD	104		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,7,8-TCDF	72		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,7,8-TCDD	77		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,4,7,8-PeCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-2,3,4,6,7,8-HxCDF	74		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8,9-HxCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8,9-HxCDD	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8-PeCDF	73		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,7,8-PeCDD	72		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,6,7,8-HxCDF	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,6,7,8-HxCDD	78		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8,9-HpCDF	81		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8-HxCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,7,8-HxCDD	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,6,7,8-HpCDF	75		40 - 135				03/28/23 09:37	03/29/23 22:49	1
13C-1,2,3,4,6,7,8-HpCDD	85		40 - 135				03/28/23 09:37	03/29/23 22:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	80.6		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	19.4		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 16:39	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 16:39	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 16:39	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 16:39	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 16:39	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 16:39	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:39	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 16:39	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 16:39	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 16:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	87		80 - 120					03/22/23 16:39	1
Dibromofluoromethane (Surr)	86		71 - 121					03/22/23 16:39	1
4-Bromofluorobenzene (Surr)	92		80 - 120					03/22/23 16:39	1
1,2-Dichloroethane-d4 (Surr)	92		76 - 120					03/22/23 16:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 15:38	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 15:38	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 15:38	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 15:38	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 15:38	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 15:38	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 15:38	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 15:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	115		46 - 137				03/21/23 12:03	03/23/23 15:38	1
Phenol-d5 (Surr)	52		26 - 120				03/21/23 12:03	03/23/23 15:38	1
Nitrobenzene-d5 (Surr)	66		24 - 120				03/21/23 12:03	03/23/23 15:38	1
2-Fluorophenol (Surr)	57		19 - 120				03/21/23 12:03	03/23/23 15:38	1
2-Fluorobiphenyl (Surr)	84		33 - 120				03/21/23 12:03	03/23/23 15:38	1
2,4,6-Tribromophenol (Surr)	112		10 - 120				03/21/23 12:03	03/23/23 15:38	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:39	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:39	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:39	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:39	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:39	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:39	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:39	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 145	03/21/23 12:08	03/22/23 14:39	1
DCB Decachlorobiphenyl	69		10 - 145	03/21/23 12:08	03/22/23 14:39	1
Tetrachloro-m-xylene	66		10 - 123	03/21/23 12:08	03/22/23 14:39	1
Tetrachloro-m-xylene	64		10 - 123	03/21/23 12:08	03/22/23 14:39	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		65	32	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1221	ND		65	39	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1232	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1242	ND		65	25	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1248	ND		65	22	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1254	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1260	ND		65	27	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1262	ND		65	28	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1
Aroclor-1268	ND		65	21	ug/Kg	☆	03/21/23 08:36	03/21/23 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		10 - 149	03/21/23 08:36	03/21/23 16:59	1
DCB Decachlorobiphenyl	88		10 - 174	03/21/23 08:36	03/21/23 16:59	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 09:07	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 09:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	53		26 - 136	03/23/23 21:15	03/24/23 09:07	1
2,4-Dichlorophenylacetic acid (Surr)	59		26 - 136	03/23/23 21:15	03/24/23 09:07	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	6.5	B	6.0	0.060	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,6,7,8-HpCDF	0.84	J I B	6.0	0.0084	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8-HxCDD	0.15	J I B	6.0	0.0066	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8-HxCDF	0.21	J B	6.0	0.010	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,4,7,8,9-HpCDF	0.13	J I B	6.0	0.011	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,6,7,8-HxCDD	0.18	J I B	6.0	0.0071	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,6,7,8-HxCDF	0.16	J B	6.0	0.010	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8-PeCDD	ND		6.0	0.0044	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8-PeCDF	0.12	J B	6.0	0.0068	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8,9-HxCDD	0.26	J B	6.0	0.0067	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
1,2,3,7,8,9-HxCDF	ND		6.0	0.012	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,4,6,7,8-HxCDF	0.18	J B	6.0	0.0096	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,4,7,8-PeCDF	0.18	J B	6.0	0.0053	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,7,8-TCDD	ND		1.2	0.013	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
2,3,7,8-TCDF	ND		1.2	0.0061	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
OCDD	250	B	12	0.065	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
OCDF	1.7	J B	12	0.013	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
Total HxCDD	3.9	J I B	6.0	0.0068	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1
Total HxCDF	1.4	J I B	6.0	0.011	ng/Kg	☆	03/28/23 09:37	03/29/23 23:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	6.5	B	6.0	0.060	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Total HpCDF	0.97	J I B	6.0	0.0097	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Total PeCDD	0.76	J I B	6.0	0.0044	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Total PeCDF	1.6	J I B	6.0	0.0060	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Total TCDD	0.20	J I B	1.2	0.013	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Total TCDF	0.49	J I	1.2	0.0061	ng/Kg	✱	03/28/23 09:37	03/29/23 23:38	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	91		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-OCDD	95		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,7,8-TCDF	66		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,7,8-TCDD	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,4,7,8-PeCDF	73		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-2,3,4,6,7,8-HxCDF	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8,9-HxCDF	69		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8,9-HxCDD	73		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8-PeCDF	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,7,8-PeCDD	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,6,7,8-HxCDF	72		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,6,7,8-HxCDD	75		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8,9-HpCDF	75		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8-HxCDF	70		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,7,8-HxCDD	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,6,7,8-HpCDF	71		40 - 135				03/28/23 09:37	03/29/23 23:38	1
13C-1,2,3,4,6,7,8-HpCDD	78		40 - 135				03/28/23 09:37	03/29/23 23:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	79.7		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	20.3		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2,2-Tetrachloroethane	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0042	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1,2-Trichloroethane	ND		0.0042	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1-Dichloroethane	ND		0.0042	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,1-Dichloroethene	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2,4-Trichlorobenzene	ND		0.0042	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dibromo-3-Chloropropane	ND		0.0085	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Ethylene Dibromide	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichlorobenzene	ND		0.0042	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloroethane	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloropropane	ND		0.0042	0.00072	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,3-Dichlorobenzene	ND		0.0042	0.00069	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
1,4-Dichlorobenzene	ND		0.0042	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
2-Butanone (MEK)	ND		0.017	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
2-Hexanone	ND		0.017	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
4-Methyl-2-pentanone (MIBK)	ND		0.017	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Acetone	ND		0.021	0.018	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Benzene	ND		0.0042	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Dichlorobromomethane	ND		0.0042	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Bromoform	ND		0.0042	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Bromomethane	ND		0.0042	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Carbon disulfide	ND		0.0042	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Carbon tetrachloride	ND		0.0042	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chlorobenzene	ND		0.0042	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloroethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloroform	ND		0.0042	0.00067	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chloromethane	ND		0.0042	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
cis-1,2-Dichloroethene	ND		0.0042	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
cis-1,3-Dichloropropene	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Cyclohexane	ND		0.0085	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Chlorodibromomethane	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Dichlorodifluoromethane	ND		0.0042	0.00080	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Ethylbenzene	ND		0.0042	0.00089	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Isopropylbenzene	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methyl acetate	ND		0.021	0.0029	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methyl tert-butyl ether	ND		0.0042	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methylcyclohexane	ND		0.0085	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Methylene Chloride	ND		0.021	0.010	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Styrene	ND		0.0042	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Tetrachloroethene	ND		0.0042	0.00062	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Toluene	ND		0.0042	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
trans-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
trans-1,3-Dichloropropene	ND		0.0042	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Trichloroethene	ND		0.0042	0.00054	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Trichlorofluoromethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Vinyl chloride	0.0048		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1
Xylenes, Total	ND		0.0085	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 22:22	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	122		56 - 125	03/19/23 13:00	03/21/23 22:22	1
Dibromofluoromethane (Surr)	112		41 - 138	03/19/23 13:00	03/21/23 22:22	1
4-Bromofluorobenzene (Surr)	127		41 - 143	03/19/23 13:00	03/21/23 22:22	1
1,2-Dichloroethane-d4 (Surr)	128	S1+	58 - 125	03/19/23 13:00	03/21/23 22:22	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.049	J	0.082	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
bis (2-chloroisopropyl) ether	ND		0.16	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4,5-Trichlorophenol	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4,6-Trichlorophenol	ND		0.25	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dichlorophenol	ND		0.25	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dimethylphenol	ND		0.25	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dinitrophenol	ND		0.54	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,4-Dinitrotoluene	ND		0.33	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2,6-Dinitrotoluene	ND		0.33	0.092	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Chloronaphthalene	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Chlorophenol	ND		0.082	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Methylnaphthalene	0.49		0.025	0.0032	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Methylphenol	ND		0.33	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Nitroaniline	ND		0.33	0.066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
2-Nitrophenol	ND		0.082	0.021	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
3,3'-Dichlorobenzidine	ND		0.16	0.071	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
3-Nitroaniline	ND		0.33	0.081	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4,6-Dinitro-2-methylphenol	ND		0.54	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Bromophenyl phenyl ether	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chloro-3-methylphenol	ND		0.25	0.074	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chloroaniline	ND		0.25	0.049	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Chlorophenyl phenyl ether	ND		0.082	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Nitroaniline	ND		0.33	0.099	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
4-Nitrophenol	ND		0.54	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acenaphthene	0.035		0.025	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acenaphthylene	0.035		0.025	0.0066	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Acetophenone	ND		0.16	0.018	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Anthracene	0.083		0.025	0.0040	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Atrazine	ND		0.33	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzaldehyde	0.065	J	0.16	0.038	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[a]anthracene	0.41		0.025	0.0056	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[a]pyrene	0.50		0.025	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[b]fluoranthene	0.80		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[g,h,i]perylene	0.20		0.025	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Benzo[k]fluoranthene	0.28		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-chloroethoxy)methane	ND		0.16	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-chloroethyl)ether	ND		0.16	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Bis(2-ethylhexyl) phthalate	0.14		0.12	0.084	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Butyl benzyl phthalate	ND		0.12	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Caprolactam	ND		0.54	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Carbazole	0.063	J	0.082	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Chrysene	0.62		0.025	0.0025	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1
Dibenz(a,h)anthracene	0.066		0.025	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.19		0.082	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Diethyl phthalate	ND		0.12	0.051	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Dimethyl phthalate	ND		0.12	0.023	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Di-n-butyl phthalate	ND		0.12	0.083	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Di-n-octyl phthalate	ND		0.12	0.046	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Fluoranthene	0.90		0.025	0.0073	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Fluorene	0.047		0.025	0.0045	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorobenzene	ND		0.025	0.0047	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorobutadiene	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachlorocyclopentadiene	ND		0.54	0.10	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Hexachloroethane	ND		0.082	0.015	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Indeno[1,2,3-cd]pyrene	0.19		0.025	0.012	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Isophorone	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
N-Nitrosodi-n-propylamine	ND		0.082	0.018	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
N-Nitrosodiphenylamine	ND		0.082	0.020	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Naphthalene	0.28		0.025	0.0040	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Nitrobenzene	ND		0.16	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Pentachlorophenol	ND		0.25	0.096	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Phenanthrene	0.54		0.025	0.0037	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Phenol	0.014	J	0.082	0.013	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
Pyrene	0.85		0.025	0.0035	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1
3 & 4 Methylphenol	ND		0.66	0.048	mg/Kg	✱	03/22/23 08:13	03/24/23 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137	03/22/23 08:13	03/24/23 18:24	1
Phenol-d5 (Surr)	62		26 - 120	03/22/23 08:13	03/24/23 18:24	1
Nitrobenzene-d5 (Surr)	40		25 - 120	03/22/23 08:13	03/24/23 18:24	1
2-Fluorophenol (Surr)	55		20 - 120	03/22/23 08:13	03/24/23 18:24	1
2-Fluorobiphenyl (Surr)	66		34 - 120	03/22/23 08:13	03/24/23 18:24	1
2,4,6-Tribromophenol (Surr)	102		10 - 120	03/22/23 08:13	03/24/23 18:24	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.016	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:35	1
Barium	0.43	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:35	1
Cadmium	0.0031	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:35	1
Chromium	0.0042	J ^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:35	1
Lead	0.020	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:35	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:35	1
Silver	0.0018	J B ^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:35	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	60.5		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	39.5		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0047	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,1,2,2-Tetrachloroethane	ND		0.0047	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0047	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,1,2-Trichloroethane	ND	+	0.0047	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,1-Dichloroethane	ND		0.0047	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,1-Dichloroethene	ND		0.0047	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,2,4-Trichlorobenzene	ND		0.0047	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,2-Dibromo-3-Chloropropane	ND		0.0093	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Ethylene Dibromide	ND		0.0047	0.00072	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichlorobenzene	ND		0.0047	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloroethane	ND		0.0047	0.00072	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloropropane	ND		0.0047	0.00079	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,3-Dichlorobenzene	ND		0.0047	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
1,4-Dichlorobenzene	ND		0.0047	0.00082	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
2-Butanone (MEK)	ND		0.019	0.0033	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
2-Hexanone	ND		0.019	0.0038	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
4-Methyl-2-pentanone (MIBK)	ND		0.019	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Acetone	ND		0.023	0.020	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Benzene	ND		0.0047	0.00065	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Dichlorobromomethane	ND		0.0047	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Bromoform	ND		0.0047	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Bromomethane	ND		0.0047	0.0039	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Carbon disulfide	ND		0.0047	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Carbon tetrachloride	ND		0.0047	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Chlorobenzene	ND		0.0047	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Chloroethane	ND		0.0047	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Chloroform	ND		0.0047	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Chloromethane	ND		0.0047	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
cis-1,2-Dichloroethene	ND		0.0047	0.0014	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
cis-1,3-Dichloropropene	ND		0.0047	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Cyclohexane	ND		0.0093	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Chlorodibromomethane	ND		0.0047	0.0026	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Dichlorodifluoromethane	ND		0.0047	0.00088	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Ethylbenzene	ND		0.0047	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Isopropylbenzene	ND		0.0047	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Methyl acetate	ND		0.023	0.0032	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Methyl tert-butyl ether	ND		0.0047	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Methylcyclohexane	ND		0.0093	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Methylene Chloride	ND		0.023	0.011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Styrene	ND		0.0047	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Tetrachloroethene	ND		0.0047	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Toluene	ND	+	0.0047	0.00072	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
trans-1,2-Dichloroethene	ND		0.0047	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
trans-1,3-Dichloropropene	ND		0.0047	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Trichloroethene	ND		0.0047	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Trichlorofluoromethane	ND		0.0047	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Vinyl chloride	ND		0.0047	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1
Xylenes, Total	ND	+	0.0093	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 12:56	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	90		56 - 125	03/19/23 13:00	03/21/23 12:56	1
Dibromofluoromethane (Surr)	86		41 - 138	03/19/23 13:00	03/21/23 12:56	1
4-Bromofluorobenzene (Surr)	59		41 - 143	03/19/23 13:00	03/21/23 12:56	1
1,2-Dichloroethane-d4 (Surr)	98		58 - 125	03/19/23 13:00	03/21/23 12:56	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.14		0.12	0.041	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
bis (2-chloroisopropyl) ether	ND		0.24	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4,5-Trichlorophenol	ND		0.36	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4,6-Trichlorophenol	ND		0.36	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dichlorophenol	ND		0.36	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dimethylphenol	ND		0.36	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dinitrophenol	ND		0.80	0.34	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,4-Dinitrotoluene	ND		0.48	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2,6-Dinitrotoluene	ND		0.48	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Chloronaphthalene	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Chlorophenol	ND		0.12	0.024	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Methylnaphthalene	0.95		0.036	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Methylphenol	ND		0.48	0.075	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Nitroaniline	ND		0.48	0.097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
2-Nitrophenol	ND		0.12	0.031	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
3,3'-Dichlorobenzidine	ND		0.24	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
3-Nitroaniline	ND		0.48	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4,6-Dinitro-2-methylphenol	ND		0.80	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Bromophenyl phenyl ether	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chloro-3-methylphenol	ND		0.36	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chloroaniline	ND		0.36	0.073	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Chlorophenyl phenyl ether	ND		0.12	0.034	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Nitroaniline	ND		0.48	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
4-Nitrophenol	ND		0.80	0.23	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acenaphthene	0.39		0.036	0.0069	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acenaphthylene	0.26		0.036	0.0097	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Acetophenone	ND		0.24	0.027	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Anthracene	0.40		0.036	0.0058	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Atrazine	ND		0.48	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzaldehyde	ND		0.24	0.056	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[a]anthracene	0.90		0.036	0.0083	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[a]pyrene	0.92		0.036	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[b]fluoranthene	1.4		0.036	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[g,h,i]perylene	0.36		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Benzo[k]fluoranthene	0.48		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-chloroethoxy)methane	ND		0.24	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-chloroethyl)ether	ND		0.24	0.029	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Bis(2-ethylhexyl) phthalate	ND		0.17	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Butyl benzyl phthalate	ND		0.17	0.053	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Caprolactam	ND		0.80	0.18	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Carbazole	0.21		0.12	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Chrysene	0.85		0.036	0.0036	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2
Dibenz(a,h)anthracene	0.11		0.036	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 16:52	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.65		0.12	0.031	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Diethyl phthalate	ND		0.17	0.075	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Dimethyl phthalate	ND		0.17	0.034	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Di-n-butyl phthalate	ND		0.17	0.12	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Di-n-octyl phthalate	ND		0.17	0.068	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Fluoranthene	1.8		0.036	0.011	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Fluorene	0.47		0.036	0.0066	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Hexachlorobenzene	ND		0.036	0.0069	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Hexachlorobutadiene	ND		0.12	0.029	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Hexachlorocyclopentadiene	ND		0.80	0.15	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Hexachloroethane	ND		0.12	0.022	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Indeno[1,2,3-cd]pyrene	0.32		0.036	0.018	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Isophorone	ND		0.12	0.029	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
N-Nitrosodi-n-propylamine	ND		0.12	0.027	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
N-Nitrosodiphenylamine	ND		0.12	0.029	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Naphthalene	1.2		0.036	0.0058	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Nitrobenzene	ND		0.24	0.031	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Pentachlorophenol	ND		0.36	0.14	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Phenanthrene	1.7		0.036	0.0054	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Phenol	ND		0.12	0.019	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
Pyrene	1.9		0.036	0.0052	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2
3 & 4 Methylphenol	ND		0.97	0.070	mg/Kg	✳	03/22/23 08:13	03/24/23 16:52	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		46 - 137	03/22/23 08:13	03/24/23 16:52	2
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 16:52	2
Nitrobenzene-d5 (Surr)	52		25 - 120	03/22/23 08:13	03/24/23 16:52	2
2-Fluorophenol (Surr)	65		20 - 120	03/22/23 08:13	03/24/23 16:52	2
2-Fluorobiphenyl (Surr)	61		34 - 120	03/22/23 08:13	03/24/23 16:52	2
2,4,6-Tribromophenol (Surr)	83		10 - 120	03/22/23 08:13	03/24/23 16:52	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.011	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:39	1
Barium	0.67	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:39	1
Cadmium	0.0022	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:39	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:39	1
Lead	0.024	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:39	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:39	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:39	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	82.7		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	17.3		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0033	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,1,2,2-Tetrachloroethane	ND	*3	0.0033	0.00095	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0033	0.00085	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,1,2-Trichloroethane	ND	+	0.0033	0.00075	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,1-Dichloroethane	ND		0.0033	0.00046	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,1-Dichloroethene	ND		0.0033	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,2,4-Trichlorobenzene	ND	*3	0.0033	0.0017	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.0066	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Ethylene Dibromide	ND		0.0033	0.00051	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichlorobenzene	ND	*3	0.0033	0.00074	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloroethane	ND		0.0033	0.00051	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloropropane	ND		0.0033	0.00057	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,3-Dichlorobenzene	ND	*3	0.0033	0.00054	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
1,4-Dichlorobenzene	ND	*3	0.0033	0.00059	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
2-Butanone (MEK)	0.013		0.013	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
2-Hexanone	ND		0.013	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
4-Methyl-2-pentanone (MIBK)	0.012	J	0.013	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Acetone	0.072		0.017	0.014	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Benzene	0.0016	J	0.0033	0.00046	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Dichlorobromomethane	ND		0.0033	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Bromoform	ND		0.0033	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Bromomethane	ND		0.0033	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Carbon disulfide	ND		0.0033	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Carbon tetrachloride	ND		0.0033	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Chlorobenzene	ND		0.0033	0.00061	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Chloroethane	ND		0.0033	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Chloroform	ND		0.0033	0.00052	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Chloromethane	ND		0.0033	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
cis-1,2-Dichloroethene	ND		0.0033	0.00098	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
cis-1,3-Dichloropropene	ND		0.0033	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Cyclohexane	ND		0.0066	0.00091	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Chlorodibromomethane	ND		0.0033	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Dichlorodifluoromethane	ND		0.0033	0.00063	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Ethylbenzene	ND		0.0033	0.00070	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Isopropylbenzene	ND		0.0033	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Methyl acetate	ND		0.017	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Methyl tert-butyl ether	ND		0.0033	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Methylcyclohexane	0.0012	J	0.0066	0.00081	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Methylene Chloride	ND		0.017	0.0080	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Styrene	ND		0.0033	0.00077	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Tetrachloroethene	ND		0.0033	0.00048	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Toluene	0.00095	J**	0.0033	0.00051	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
trans-1,2-Dichloroethene	ND		0.0033	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
trans-1,3-Dichloropropene	ND		0.0033	0.0025	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Trichloroethene	ND		0.0033	0.00042	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Trichlorofluoromethane	ND		0.0033	0.0018	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Vinyl chloride	ND		0.0033	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1
Xylenes, Total	0.0017	J**	0.0066	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 13:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	03/19/23 13:00	03/21/23 13:17	1
Dibromofluoromethane (Surr)	83		41 - 138	03/19/23 13:00	03/21/23 13:17	1
4-Bromofluorobenzene (Surr)	53		41 - 143	03/19/23 13:00	03/21/23 13:17	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125	03/19/23 13:00	03/21/23 13:17	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.12	0.040	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
bis (2-chloroisopropyl) ether	ND		0.23	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4,5-Trichlorophenol	ND		0.35	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4,6-Trichlorophenol	ND		0.35	0.15	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dichlorophenol	ND		0.35	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dimethylphenol	ND		0.35	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dinitrophenol	ND		0.77	0.33	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,4-Dinitrotoluene	ND		0.47	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2,6-Dinitrotoluene	ND		0.47	0.13	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Chloronaphthalene	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Chlorophenol	ND		0.12	0.023	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Methylnaphthalene	0.17		0.035	0.0046	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Methylphenol	ND		0.47	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Nitroaniline	ND		0.47	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
2-Nitrophenol	ND		0.12	0.030	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
3,3'-Dichlorobenzidine	ND		0.23	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
3-Nitroaniline	ND		0.47	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4,6-Dinitro-2-methylphenol	ND		0.77	0.19	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Bromophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chloro-3-methylphenol	ND		0.35	0.10	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chloroaniline	ND		0.35	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Chlorophenyl phenyl ether	ND		0.12	0.033	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Nitroaniline	ND		0.47	0.14	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
4-Nitrophenol	ND		0.77	0.22	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acenaphthene	0.13		0.035	0.0067	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acenaphthylene	0.015	J	0.035	0.0093	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Acetophenone	ND		0.23	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Anthracene	0.28		0.035	0.0056	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Atrazine	ND		0.47	0.084	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzaldehyde	ND		0.23	0.054	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[a]anthracene	0.68		0.035	0.0079	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[a]pyrene	0.64		0.035	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[b]fluoranthene	0.93		0.035	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[g,h,i]perylene	0.26		0.035	0.017	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Benzo[k]fluoranthene	0.39		0.035	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-chloroethoxy)methane	ND		0.23	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-chloroethyl)ether	ND		0.23	0.028	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Bis(2-ethylhexyl) phthalate	0.16		0.16	0.12	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Butyl benzyl phthalate	0.089	J	0.16	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Caprolactam	ND		0.77	0.17	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Carbazole	0.25		0.12	0.044	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Chrysene	0.85		0.035	0.0035	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2
Dibenz(a,h)anthracene	0.083		0.035	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 17:15	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.13		0.12	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Diethyl phthalate	ND		0.16	0.072	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Dimethyl phthalate	ND		0.16	0.033	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Di-n-butyl phthalate	ND		0.16	0.12	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Di-n-octyl phthalate	ND		0.16	0.065	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Fluoranthene	2.1		0.035	0.010	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Fluorene	0.19		0.035	0.0064	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorobenzene	ND		0.035	0.0066	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorobutadiene	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachlorocyclopentadiene	ND		0.77	0.14	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Hexachloroethane	ND		0.12	0.021	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Indeno[1,2,3-cd]pyrene	0.25		0.035	0.017	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Isophorone	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
N-Nitrosodi-n-propylamine	ND		0.12	0.026	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
N-Nitrosodiphenylamine	ND		0.12	0.028	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Naphthalene	0.12		0.035	0.0056	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Nitrobenzene	ND		0.23	0.030	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Pentachlorophenol	ND		0.35	0.13	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Phenanthrene	1.5		0.035	0.0052	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Phenol	ND		0.12	0.019	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
Pyrene	1.7		0.035	0.0050	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2
3 & 4 Methylphenol	ND		0.93	0.067	mg/Kg	✱	03/22/23 08:13	03/24/23 17:15	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	82		46 - 137	03/22/23 08:13	03/24/23 17:15	2
Phenol-d5 (Surr)	68		26 - 120	03/22/23 08:13	03/24/23 17:15	2
Nitrobenzene-d5 (Surr)	54		25 - 120	03/22/23 08:13	03/24/23 17:15	2
2-Fluorophenol (Surr)	64		20 - 120	03/22/23 08:13	03/24/23 17:15	2
2-Fluorobiphenyl (Surr)	72		34 - 120	03/22/23 08:13	03/24/23 17:15	2
2,4,6-Tribromophenol (Surr)	86		10 - 120	03/22/23 08:13	03/24/23 17:15	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:44	1
Barium	0.62	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:44	1
Cadmium	0.0010	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:44	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:44	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:44	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:44	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:44	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.5		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	13.5		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2,2-Tetrachloroethane	ND	*3	0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0042	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1,2-Trichloroethane	ND	**	0.0042	0.00094	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1-Dichloroethane	ND		0.0042	0.00058	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,1-Dichloroethene	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2,4-Trichlorobenzene	ND	*3	0.0042	0.0021	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dibromo-3-Chloropropane	ND	*3	0.0083	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Ethylene Dibromide	ND		0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichlorobenzene	ND	*3	0.0042	0.00092	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloroethane	ND		0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloropropane	ND		0.0042	0.00071	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,3-Dichlorobenzene	ND	*3	0.0042	0.00068	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
1,4-Dichlorobenzene	ND	*3	0.0042	0.00073	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
2-Butanone (MEK)	ND		0.017	0.0030	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
2-Hexanone	ND		0.017	0.0034	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
4-Methyl-2-pentanone (MIBK)	ND		0.017	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Acetone	ND		0.021	0.017	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Benzene	ND		0.0042	0.00058	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Dichlorobromomethane	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Bromoform	ND		0.0042	0.0020	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Bromomethane	ND		0.0042	0.0035	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Carbon disulfide	ND		0.0042	0.00097	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Carbon tetrachloride	ND		0.0042	0.0027	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chlorobenzene	ND		0.0042	0.00076	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloroethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloroform	ND		0.0042	0.00066	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chloromethane	ND		0.0042	0.0019	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
cis-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
cis-1,3-Dichloropropene	ND		0.0042	0.0024	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Cyclohexane	ND		0.0083	0.0011	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Chlorodibromomethane	ND		0.0042	0.0023	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Dichlorodifluoromethane	ND		0.0042	0.00078	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Ethylbenzene	ND		0.0042	0.00087	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Isopropylbenzene	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methyl acetate	ND		0.021	0.0028	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methyl tert-butyl ether	ND		0.0042	0.0016	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methylcyclohexane	ND		0.0083	0.0010	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Methylene Chloride	ND		0.021	0.010	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Styrene	ND		0.0042	0.00096	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Tetrachloroethene	ND		0.0042	0.00061	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Toluene	ND	**	0.0042	0.00064	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
trans-1,2-Dichloroethene	ND		0.0042	0.0012	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
trans-1,3-Dichloropropene	ND		0.0042	0.0031	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Trichloroethene	ND		0.0042	0.00053	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Trichlorofluoromethane	ND		0.0042	0.0022	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Vinyl chloride	ND		0.0042	0.0015	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1
Xylenes, Total	0.0047	J**	0.0083	0.0013	mg/Kg	✳	03/19/23 13:00	03/21/23 13:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		56 - 125	03/19/23 13:00	03/21/23 13:38	1
Dibromofluoromethane (Surr)	95		41 - 138	03/19/23 13:00	03/21/23 13:38	1
4-Bromofluorobenzene (Surr)	54		41 - 143	03/19/23 13:00	03/21/23 13:38	1
1,2-Dichloroethane-d4 (Surr)	107		58 - 125	03/19/23 13:00	03/21/23 13:38	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.058	0.020	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
bis (2-chloroisopropyl) ether	ND		0.12	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4,5-Trichlorophenol	ND		0.17	0.080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4,6-Trichlorophenol	ND		0.17	0.074	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dichlorophenol	ND		0.17	0.051	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dimethylphenol	ND		0.17	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dinitrophenol	ND		0.38	0.16	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,4-Dinitrotoluene	ND		0.23	0.072	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2,6-Dinitrotoluene	ND		0.23	0.065	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Chloronaphthalene	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Chlorophenol	ND		0.058	0.012	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Methylnaphthalene	0.13		0.017	0.0023	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Methylphenol	ND		0.23	0.036	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Nitroaniline	ND		0.23	0.046	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
2-Nitrophenol	ND		0.058	0.015	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
3,3'-Dichlorobenzidine	ND		0.12	0.050	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
3-Nitroaniline	ND		0.23	0.057	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4,6-Dinitro-2-methylphenol	ND		0.38	0.093	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Bromophenyl phenyl ether	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chloro-3-methylphenol	ND		0.17	0.052	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chloroaniline	ND		0.17	0.035	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Chlorophenyl phenyl ether	ND		0.058	0.016	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Nitroaniline	ND		0.23	0.070	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
4-Nitrophenol	ND		0.38	0.11	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acenaphthene	0.010	J	0.017	0.0033	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acenaphthylene	0.0065	J	0.017	0.0047	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Acetophenone	ND		0.12	0.013	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Anthracene	0.018		0.017	0.0028	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Atrazine	ND		0.23	0.042	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzaldehyde	0.042	J	0.12	0.027	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[a]anthracene	0.095		0.017	0.0040	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[a]pyrene	0.096		0.017	0.011	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[b]fluoranthene	0.15		0.017	0.0075	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[g,h,i]perylene	0.035		0.017	0.0082	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Benzo[k]fluoranthene	0.048		0.017	0.0080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-chloroethoxy)methane	ND		0.12	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-chloroethyl)ether	ND		0.12	0.014	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Bis(2-ethylhexyl) phthalate	ND		0.081	0.059	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Butyl benzyl phthalate	ND		0.081	0.026	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Caprolactam	ND		0.38	0.087	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Carbazole	ND		0.058	0.022	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Chrysene	0.12		0.017	0.0017	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1
Dibenz(a,h)anthracene	ND		0.017	0.0080	mg/Kg	☆	03/22/23 08:13	03/24/23 18:47	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.062		0.058	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Diethyl phthalate	ND		0.081	0.036	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Dimethyl phthalate	ND		0.081	0.016	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Di-n-butyl phthalate	ND		0.081	0.059	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Di-n-octyl phthalate	ND		0.081	0.032	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Fluoranthene	0.21		0.017	0.0052	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Fluorene	0.0097	J	0.017	0.0032	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorobenzene	ND		0.017	0.0033	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorobutadiene	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachlorocyclopentadiene	ND		0.38	0.072	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Hexachloroethane	ND		0.058	0.010	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Indeno[1,2,3-cd]pyrene	0.033		0.017	0.0085	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Isophorone	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
N-Nitrosodi-n-propylamine	ND		0.058	0.013	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
N-Nitrosodiphenylamine	ND		0.058	0.014	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Naphthalene	0.071		0.017	0.0028	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Nitrobenzene	ND		0.12	0.015	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Pentachlorophenol	ND		0.17	0.067	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Phenanthrene	0.19		0.017	0.0026	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Phenol	ND		0.058	0.0093	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
Pyrene	0.19		0.017	0.0025	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1
3 & 4 Methylphenol	ND		0.46	0.034	mg/Kg	✳	03/22/23 08:13	03/24/23 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		46 - 137	03/22/23 08:13	03/24/23 18:47	1
Phenol-d5 (Surr)	51		26 - 120	03/22/23 08:13	03/24/23 18:47	1
Nitrobenzene-d5 (Surr)	42		25 - 120	03/22/23 08:13	03/24/23 18:47	1
2-Fluorophenol (Surr)	47		20 - 120	03/22/23 08:13	03/24/23 18:47	1
2-Fluorobiphenyl (Surr)	57		34 - 120	03/22/23 08:13	03/24/23 18:47	1
2,4,6-Tribromophenol (Surr)	96		10 - 120	03/22/23 08:13	03/24/23 18:47	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:48	1
Barium	0.69	B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:48	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:48	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:48	1
Lead	0.0042	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:48	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:48	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:48	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.3		0.1	0.1	%			03/21/23 11:05	1
Percent Moisture (EPA Moisture)	14.7		0.1	0.1	%			03/21/23 11:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 17:02	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 17:02	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 17:02	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 17:02	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 17:02	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 17:02	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 17:02	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 17:02	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 17:02	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 17:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					03/22/23 17:02	1
Dibromofluoromethane (Surr)	96		71 - 121					03/22/23 17:02	1
4-Bromofluorobenzene (Surr)	108		80 - 120					03/22/23 17:02	1
1,2-Dichloroethane-d4 (Surr)	102		76 - 120					03/22/23 17:02	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 16:00	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 16:00	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 16:00	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 16:00	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 16:00	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 16:00	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 16:00	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	118		46 - 137				03/21/23 12:03	03/23/23 16:00	1
Phenol-d5 (Surr)	62		26 - 120				03/21/23 12:03	03/23/23 16:00	1
Nitrobenzene-d5 (Surr)	80		24 - 120				03/21/23 12:03	03/23/23 16:00	1
2-Fluorophenol (Surr)	72		19 - 120				03/21/23 12:03	03/23/23 16:00	1
2-Fluorobiphenyl (Surr)	95		33 - 120				03/21/23 12:03	03/23/23 16:00	1
2,4,6-Tribromophenol (Surr)	110		10 - 120				03/21/23 12:03	03/23/23 16:00	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 14:54	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 14:54	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 14:54	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 14:54	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 14:54	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 14:54	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 14:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	74		10 - 145	03/21/23 12:08	03/22/23 14:54	1
DCB Decachlorobiphenyl	71		10 - 145	03/21/23 12:08	03/22/23 14:54	1
Tetrachloro-m-xylene	66		10 - 123	03/21/23 12:08	03/22/23 14:54	1
Tetrachloro-m-xylene	68		10 - 123	03/21/23 12:08	03/22/23 14:54	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		81	41	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1221	ND		81	49	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1232	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1242	ND		81	31	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1248	ND		81	28	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1254	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1260	ND		81	34	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1262	ND		81	36	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1
Aroclor-1268	ND		81	26	ug/Kg	☆	03/21/23 08:36	03/21/23 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	86		10 - 149	03/21/23 08:36	03/21/23 17:15	1
DCB Decachlorobiphenyl	74		10 - 174	03/21/23 08:36	03/21/23 17:15	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 09:35	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 09:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	51		26 - 136	03/23/23 21:15	03/24/23 09:35	1
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	03/23/23 21:15	03/24/23 09:35	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	180	B	7.9	0.12	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,6,7,8-HpCDF	62	B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8-HxCDD	4.4	J B	7.9	0.057	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8-HxCDF	4.2	J B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,4,7,8,9-HpCDF	2.8	J B	7.9	0.18	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,6,7,8-HxCDD	9.4	B	7.9	0.059	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,6,7,8-HxCDF	3.9	J B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8-PeCDD	5.1	J B	7.9	0.039	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8-PeCDF	1.4	J B	7.9	0.051	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8,9-HxCDD	20	B	7.9	0.060	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
1,2,3,7,8,9-HxCDF	0.79	J B	7.9	0.16	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,4,6,7,8-HxCDF	5.2	J B	7.9	0.13	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,4,7,8-PeCDF	6.4	J B	7.9	0.040	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,7,8-TCDD	1.2	J B	1.6	0.019	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
2,3,7,8-TCDF	1.2	J	1.6	0.041	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
OCDD	1600	B	16	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
OCDF	80	B	16	0.087	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
Total HxCDD	130	B	7.9	0.059	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1
Total HxCDF	91	B	7.9	0.14	ng/Kg	☆	03/28/23 09:37	03/30/23 00:26	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	180	B	7.9	0.12	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total HpCDF	130	B	7.9	0.16	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total PeCDD	42	I B	7.9	0.039	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total PeCDF	39	I B	7.9	0.046	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total TCDD	11	I B	1.6	0.019	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Total TCDF	34	I	1.6	0.041	ng/Kg	✳	03/28/23 09:37	03/30/23 00:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	66		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-OCDD	70		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-2,3,7,8-TCDF	48		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-2,3,7,8-TCDD	54		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-2,3,4,7,8-PeCDF	53		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-2,3,4,6,7,8-HxCDF	50		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8,9-HxCDF	49		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8,9-HxCDD	55		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8-PeCDF	53		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,7,8-PeCDD	54		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,6,7,8-HxCDF	54		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,6,7,8-HxCDD	57		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8,9-HpCDF	54		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8-HxCDF	53		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,7,8-HxCDD	55		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,6,7,8-HpCDF	52		40 - 135				03/28/23 09:37	03/30/23 00:26	1
13C-1,2,3,4,6,7,8-HpCDD	60		40 - 135				03/28/23 09:37	03/30/23 00:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	61.6		0.1	0.1	%			03/20/23 11:50	1
Percent Moisture (EPA Moisture)	38.4		0.1	0.1	%			03/20/23 11:50	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		3.5	1.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2,2-Tetrachloroethane	ND		3.5	2.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.5	0.95	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1,2-Trichloroethane	ND		3.5	0.81	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1-Dichloroethane	ND		3.5	0.68	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,1-Dichloroethene	ND		3.5	1.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2,4-Trichlorobenzene	ND		3.5	1.9	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dibromo-3-Chloropropane	ND		7.1	3.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Ethylene Dibromide	ND		3.5	1.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichlorobenzene	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloroethane	ND		3.5	0.67	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloropropane	ND		3.5	0.52	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,3-Dichlorobenzene	ND		3.5	0.65	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
1,4-Dichlorobenzene	ND		3.5	0.78	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
2-Butanone (MEK)	ND		14	2.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
2-Hexanone	ND		14	3.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
4-Methyl-2-pentanone (MIBK)	ND		14	3.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Acetone	ND		14	3.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Benzene	ND		3.5	0.59	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Dichlorobromomethane	ND		3.5	0.86	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Bromoform	ND		3.5	3.2	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Bromomethane	ND		3.5	2.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Carbon disulfide	ND		3.5	1.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Carbon tetrachloride	ND		3.5	1.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chlorobenzene	ND		3.5	0.50	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloroethane	ND		3.5	2.1	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloroform	ND		3.5	0.76	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chloromethane	ND		3.5	0.93	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
cis-1,2-Dichloroethene	ND		3.5	0.57	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
cis-1,3-Dichloropropene	ND		3.5	1.8	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Cyclohexane	ND		7.1	2.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Chlorodibromomethane	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Dichlorodifluoromethane	ND		3.5	0.75	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Ethylbenzene	ND		3.5	0.67	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Isopropylbenzene	ND		3.5	0.54	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methyl acetate	ND		18	2.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methyl tert-butyl ether	ND		3.5	0.52	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methylcyclohexane	ND		7.1	0.93	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Methylene Chloride	ND		7.1	5.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Styrene	ND		3.5	0.74	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Tetrachloroethene	ND		3.5	1.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Toluene	ND		3.5	3.4	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
trans-1,2-Dichloroethene	ND		3.5	0.88	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
trans-1,3-Dichloropropene	ND		3.5	1.5	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Trichloroethene	ND		3.5	2.0	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Trichlorofluoromethane	ND		3.5	1.9	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Vinyl chloride	ND		3.5	1.7	mg/Kg		03/24/23 22:04	03/25/23 12:44	1
Xylenes, Total	ND		7.1	1.3	mg/Kg		03/24/23 22:04	03/25/23 12:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	79		56 - 125	03/24/23 22:04	03/25/23 12:44	1
Dibromofluoromethane (Surr)	83		41 - 138	03/24/23 22:04	03/25/23 12:44	1
4-Bromofluorobenzene (Surr)	65		41 - 143	03/24/23 22:04	03/25/23 12:44	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	03/24/23 22:04	03/25/23 12:44	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.40	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
bis (2-chloroisopropyl) ether	ND		2.3	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4,5-Trichlorophenol	ND		3.5	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4,6-Trichlorophenol	ND		3.5	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dichlorophenol	ND		3.5	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dimethylphenol	ND		3.5	0.94	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dinitrophenol	ND		7.7	3.3	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,4-Dinitrotoluene	ND		4.7	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2,6-Dinitrotoluene	ND		4.7	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Chloronaphthalene	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Chlorophenol	ND		1.2	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Methylnaphthalene	ND		0.35	0.046	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Methylphenol	ND		4.7	0.73	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Nitroaniline	ND		4.7	0.94	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
2-Nitrophenol	ND		1.2	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3,3'-Dichlorobenzidine	ND		2.3	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3-Nitroaniline	ND		4.7	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4,6-Dinitro-2-methylphenol	ND		7.7	1.9	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Bromophenyl phenyl ether	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chloro-3-methylphenol	ND		3.5	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chloroaniline	ND		3.5	0.70	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Chlorophenyl phenyl ether	ND		1.2	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Nitroaniline	ND		4.7	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
4-Nitrophenol	ND		7.7	2.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acenaphthene	ND		0.35	0.067	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acenaphthylene	ND		0.35	0.094	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Acetophenone	ND		2.3	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Anthracene	ND		0.35	0.056	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Atrazine	ND		4.7	0.84	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzaldehyde	ND		2.3	0.54	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[a]anthracene	ND		0.35	0.080	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[a]pyrene	ND		0.35	0.22	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[b]fluoranthene	ND		0.35	0.15	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[g,h,i]perylene	ND		0.35	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Benzo[k]fluoranthene	ND		0.35	0.16	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-chloroethoxy)methane	ND		2.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-chloroethyl)ether	ND		2.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Bis(2-ethylhexyl) phthalate	ND		1.6	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Butyl benzyl phthalate	ND		1.6	0.52	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Caprolactam	ND		7.7	1.8	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Carbazole	ND		1.2	0.45	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Chrysene	ND		0.35	0.035	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Dibenz(a,h)anthracene	ND		0.35	0.16	mg/Kg		03/22/23 08:13	03/24/23 15:21	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.2	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Diethyl phthalate	ND		1.6	0.73	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Dimethyl phthalate	ND		1.6	0.33	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Di-n-butyl phthalate	ND		1.6	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Di-n-octyl phthalate	ND		1.6	0.66	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Fluoranthene	ND		0.35	0.10	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Fluorene	ND		0.35	0.064	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorobenzene	ND		0.35	0.067	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorobutadiene	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachlorocyclopentadiene	ND		7.7	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Hexachloroethane	ND		1.2	0.21	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Indeno[1,2,3-cd]pyrene	ND		0.35	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Isophorone	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
N-Nitrosodi-n-propylamine	ND		1.2	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
N-Nitrosodiphenylamine	ND		1.2	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Naphthalene	ND		0.35	0.056	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Nitrobenzene	ND		2.3	0.30	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Pentachlorophenol	ND		3.5	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Phenanthrene	ND		0.35	0.052	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Phenol	ND		1.2	0.19	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
Pyrene	ND		0.35	0.050	mg/Kg		03/22/23 08:13	03/24/23 15:21	1
3 & 4 Methylphenol	ND		9.4	0.68	mg/Kg		03/22/23 08:13	03/24/23 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	97		46 - 137	03/22/23 08:13	03/24/23 15:21	1
Phenol-d5 (Surr)	45		26 - 120	03/22/23 08:13	03/24/23 15:21	1
Nitrobenzene-d5 (Surr)	38		25 - 120	03/22/23 08:13	03/24/23 15:21	1
2-Fluorophenol (Surr)	43		20 - 120	03/22/23 08:13	03/24/23 15:21	1
2-Fluorobiphenyl (Surr)	58		34 - 120	03/22/23 08:13	03/24/23 15:21	1
2,4,6-Tribromophenol (Surr)	93		10 - 120	03/22/23 08:13	03/24/23 15:21	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0082	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:11	1
Barium	0.036	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:11	1
Cadmium	0.00034	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:11	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:11	1
Lead	0.0066	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:11	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:11	1
Silver	ND		0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:11	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 18:05	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.64	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.55	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1,2-Trichloroethane	ND		2.0	0.47	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1-Dichloroethane	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,1-Dichloroethene	ND		2.0	0.67	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2,4-Trichlorobenzene	ND		2.0	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dibromo-3-Chloropropane	ND		4.1	1.8	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Ethylene Dibromide	ND		2.0	0.65	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichlorobenzene	ND		2.0	0.98	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloroethane	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloropropane	ND		2.0	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,3-Dichlorobenzene	ND		2.0	0.38	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
1,4-Dichlorobenzene	ND		2.0	0.45	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
2-Butanone (MEK)	ND		8.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
2-Hexanone	ND		8.2	2.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
4-Methyl-2-pentanone (MIBK)	ND		8.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Acetone	ND		8.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Benzene	ND		2.0	0.34	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Dichlorobromomethane	ND		2.0	0.50	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Bromoform	ND		2.0	1.9	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Bromomethane	ND		2.0	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Carbon disulfide	ND		2.0	0.89	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Carbon tetrachloride	ND		2.0	0.84	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chlorobenzene	ND		2.0	0.29	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloroethane	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloroform	ND		2.0	0.44	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chloromethane	ND		2.0	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
cis-1,2-Dichloroethene	ND		2.0	0.33	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
cis-1,3-Dichloropropene	ND		2.0	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Cyclohexane	ND		4.1	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Chlorodibromomethane	ND		2.0	0.96	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Dichlorodifluoromethane	ND		2.0	0.43	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Ethylbenzene	ND		2.0	0.39	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Isopropylbenzene	ND		2.0	0.31	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methyl acetate	ND		10	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methyl tert-butyl ether	ND		2.0	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methylcyclohexane	ND		4.1	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Methylene Chloride	ND		4.1	3.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Styrene	ND		2.0	0.43	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Tetrachloroethene	ND		2.0	0.80	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Toluene	ND		2.0	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
trans-1,2-Dichloroethene	ND		2.0	0.51	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
trans-1,3-Dichloropropene	ND		2.0	0.86	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Trichloroethene	ND		2.0	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Trichlorofluoromethane	ND		2.0	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Vinyl chloride	ND		2.0	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:06	1
Xylenes, Total	ND		4.1	0.75	mg/Kg		03/24/23 22:04	03/25/23 13:06	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/24/23 22:04	03/25/23 13:06	1
Dibromofluoromethane (Surr)	80		41 - 138	03/24/23 22:04	03/25/23 13:06	1
4-Bromofluorobenzene (Surr)	63		41 - 143	03/24/23 22:04	03/25/23 13:06	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/24/23 22:04	03/25/23 13:06	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.4	0.47	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
bis (2-chloroisopropyl) ether	ND		2.8	0.28	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4,5-Trichlorophenol	ND		4.2	1.9	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4,6-Trichlorophenol	ND		4.2	1.8	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dichlorophenol	ND		4.2	1.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dimethylphenol	ND		4.2	1.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dinitrophenol	ND		9.2	3.9	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,4-Dinitrotoluene	ND		5.6	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2,6-Dinitrotoluene	ND		5.6	1.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Chloronaphthalene	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Chlorophenol	ND		1.4	0.28	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Methylnaphthalene	ND		0.42	0.054	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Methylphenol	ND		5.6	0.86	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Nitroaniline	ND		5.6	1.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
2-Nitrophenol	ND		1.4	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3,3'-Dichlorobenzidine	ND		2.8	1.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3-Nitroaniline	ND		5.6	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4,6-Dinitro-2-methylphenol	ND		9.2	2.2	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Bromophenyl phenyl ether	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chloro-3-methylphenol	ND		4.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chloroaniline	ND		4.2	0.83	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Chlorophenyl phenyl ether	ND		1.4	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Nitroaniline	ND		5.6	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
4-Nitrophenol	ND		9.2	2.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acenaphthene	ND		0.42	0.079	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acenaphthylene	ND		0.42	0.11	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Acetophenone	ND		2.8	0.31	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Anthracene	ND		0.42	0.067	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Atrazine	ND		5.6	1.0	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzaldehyde	ND		2.8	0.64	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[a]anthracene	ND		0.42	0.095	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[a]pyrene	ND		0.42	0.26	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[b]fluoranthene	ND		0.42	0.18	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[g,h,i]perylene	ND		0.42	0.20	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Benzo[k]fluoranthene	ND		0.42	0.19	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-chloroethoxy)methane	ND		2.8	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-chloroethyl)ether	ND		2.8	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Bis(2-ethylhexyl) phthalate	ND		1.9	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Butyl benzyl phthalate	ND		1.9	0.61	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Caprolactam	ND		9.2	2.1	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Carbazole	ND		1.4	0.53	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Chrysene	ND		0.42	0.041	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Dibenz(a,h)anthracene	ND		0.42	0.19	mg/Kg		03/22/23 08:13	03/24/23 14:58	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.4	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Diethyl phthalate	ND		1.9	0.86	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Dimethyl phthalate	ND		1.9	0.39	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Di-n-butyl phthalate	ND		1.9	1.4	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Di-n-octyl phthalate	ND		1.9	0.78	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Fluoranthene	ND		0.42	0.12	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Fluorene	ND		0.42	0.076	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorobenzene	ND		0.42	0.079	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorobutadiene	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachlorocyclopentadiene	ND		9.2	1.7	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Hexachloroethane	ND		1.4	0.25	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Indeno[1,2,3-cd]pyrene	ND		0.42	0.20	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Isophorone	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
N-Nitrosodi-n-propylamine	ND		1.4	0.31	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
N-Nitrosodiphenylamine	ND		1.4	0.33	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Naphthalene	0.13	J	0.42	0.067	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Nitrobenzene	ND		2.8	0.36	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Pentachlorophenol	ND		4.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Phenanthrene	ND		0.42	0.062	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Phenol	ND		1.4	0.22	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
Pyrene	ND		0.42	0.059	mg/Kg		03/22/23 08:13	03/24/23 14:58	1
3 & 4 Methylphenol	ND		11	0.81	mg/Kg		03/22/23 08:13	03/24/23 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	99		46 - 137	03/22/23 08:13	03/24/23 14:58	1
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 14:58	1
Nitrobenzene-d5 (Surr)	60		25 - 120	03/22/23 08:13	03/24/23 14:58	1
2-Fluorophenol (Surr)	64		20 - 120	03/22/23 08:13	03/24/23 14:58	1
2-Fluorobiphenyl (Surr)	75		34 - 120	03/22/23 08:13	03/24/23 14:58	1
2,4,6-Tribromophenol (Surr)	86		10 - 120	03/22/23 08:13	03/24/23 14:58	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0048	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:53	1
Barium	0.068	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:53	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:53	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:53	1
Lead	0.0077	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:53	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:53	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:53	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:13	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.2	0.68	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2,2-Tetrachloroethane	ND		2.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.2	0.58	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1,2-Trichloroethane	ND		2.2	0.49	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1-Dichloroethane	ND		2.2	0.42	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,1-Dichloroethene	ND		2.2	0.71	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2,4-Trichlorobenzene	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dibromo-3-Chloropropane	ND		4.3	1.9	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Ethylene Dibromide	ND		2.2	0.68	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichlorobenzene	ND		2.2	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloroethane	ND		2.2	0.41	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloropropane	ND		2.2	0.32	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,3-Dichlorobenzene	ND		2.2	0.40	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
1,4-Dichlorobenzene	ND		2.2	0.48	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
2-Butanone (MEK)	ND		8.7	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
2-Hexanone	ND		8.7	2.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
4-Methyl-2-pentanone (MIBK)	ND		8.7	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Acetone	ND		8.7	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Benzene	ND		2.2	0.36	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Dichlorobromomethane	ND		2.2	0.53	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Bromoform	ND		2.2	2.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Bromomethane	ND		2.2	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Carbon disulfide	ND		2.2	0.94	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Carbon tetrachloride	ND		2.2	0.88	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chlorobenzene	ND		2.2	0.30	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloroethane	ND		2.2	1.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloroform	ND		2.2	0.47	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chloromethane	ND		2.2	0.57	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
cis-1,2-Dichloroethene	ND		2.2	0.35	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
cis-1,3-Dichloropropene	ND		2.2	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Cyclohexane	ND		4.3	1.4	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Chlorodibromomethane	ND		2.2	1.0	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Dichlorodifluoromethane	ND		2.2	0.46	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Ethylbenzene	ND		2.2	0.41	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Isopropylbenzene	ND		2.2	0.33	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methyl acetate	ND		11	1.5	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methyl tert-butyl ether	ND		2.2	0.32	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methylcyclohexane	ND		4.3	0.57	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Methylene Chloride	ND		4.3	3.3	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Styrene	ND		2.2	0.45	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Tetrachloroethene	ND		2.2	0.84	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Toluene	ND		2.2	2.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
trans-1,2-Dichloroethene	ND		2.2	0.54	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
trans-1,3-Dichloropropene	ND		2.2	0.91	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Trichloroethene	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Trichlorofluoromethane	ND		2.2	1.2	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Vinyl chloride	ND		2.2	1.1	mg/Kg		03/24/23 22:04	03/25/23 13:27	1
Xylenes, Total	ND		4.3	0.79	mg/Kg		03/24/23 22:04	03/25/23 13:27	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	85		56 - 125	03/24/23 22:04	03/25/23 13:27	1
Dibromofluoromethane (Surr)	85		41 - 138	03/24/23 22:04	03/25/23 13:27	1
4-Bromofluorobenzene (Surr)	70		41 - 143	03/24/23 22:04	03/25/23 13:27	1
1,2-Dichloroethane-d4 (Surr)	90		58 - 125	03/24/23 22:04	03/25/23 13:27	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.3	0.44	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
bis (2-chloroisopropyl) ether	ND		2.6	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4,5-Trichlorophenol	ND		3.9	1.8	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4,6-Trichlorophenol	ND		3.9	1.7	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dichlorophenol	ND		3.9	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dimethylphenol	ND		3.9	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dinitrophenol	ND		8.5	3.7	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,4-Dinitrotoluene	ND		5.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2,6-Dinitrotoluene	ND		5.2	1.4	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Chloronaphthalene	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Chlorophenol	ND		1.3	0.26	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Methylnaphthalene	ND		0.39	0.051	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Methylphenol	ND		5.2	0.80	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Nitroaniline	ND		5.2	1.0	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
2-Nitrophenol	ND		1.3	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3,3'-Dichlorobenzidine	ND		2.6	1.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3-Nitroaniline	ND		5.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4,6-Dinitro-2-methylphenol	ND		8.5	2.1	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Bromophenyl phenyl ether	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chloro-3-methylphenol	ND		3.9	1.2	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chloroaniline	ND		3.9	0.78	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Chlorophenyl phenyl ether	ND		1.3	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Nitroaniline	ND		5.2	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
4-Nitrophenol	ND		8.5	2.4	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acenaphthene	ND		0.39	0.074	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acenaphthylene	ND		0.39	0.10	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Acetophenone	ND		2.6	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Anthracene	ND		0.39	0.062	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Atrazine	ND		5.2	0.93	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzaldehyde	ND		2.6	0.59	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[a]anthracene	ND		0.39	0.088	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[a]pyrene	ND		0.39	0.24	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[b]fluoranthene	ND		0.39	0.17	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[g,h,i]perylene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Benzo[k]fluoranthene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-chloroethoxy)methane	ND		2.6	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-chloroethyl)ether	ND		2.6	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Bis(2-ethylhexyl) phthalate	ND		1.8	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Butyl benzyl phthalate	ND		1.8	0.57	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Caprolactam	ND		8.5	1.9	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Carbazole	ND		1.3	0.49	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Chrysene	ND		0.39	0.039	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Dibenz(a,h)anthracene	ND		0.39	0.18	mg/Kg		03/22/23 08:13	03/24/23 15:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		1.3	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Diethyl phthalate	ND		1.8	0.80	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Dimethyl phthalate	ND		1.8	0.36	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Di-n-butyl phthalate	ND		1.8	1.3	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Di-n-octyl phthalate	ND		1.8	0.72	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Fluoranthene	ND		0.39	0.12	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Fluorene	ND		0.39	0.071	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorobenzene	ND		0.39	0.074	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorobutadiene	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachlorocyclopentadiene	ND		8.5	1.6	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Hexachloroethane	ND		1.3	0.23	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Indeno[1,2,3-cd]pyrene	ND		0.39	0.19	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Isophorone	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
N-Nitrosodi-n-propylamine	ND		1.3	0.28	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
N-Nitrosodiphenylamine	ND		1.3	0.31	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Naphthalene	ND		0.39	0.062	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Nitrobenzene	ND		2.6	0.34	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Pentachlorophenol	ND		3.9	1.5	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Phenanthrene	ND		0.39	0.058	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Phenol	ND		1.3	0.21	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
Pyrene	ND		0.39	0.055	mg/Kg		03/22/23 08:13	03/24/23 15:44	1
3 & 4 Methylphenol	ND		10	0.75	mg/Kg		03/22/23 08:13	03/24/23 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	108		46 - 137	03/22/23 08:13	03/24/23 15:44	1
Phenol-d5 (Surr)	53		26 - 120	03/22/23 08:13	03/24/23 15:44	1
Nitrobenzene-d5 (Surr)	46		25 - 120	03/22/23 08:13	03/24/23 15:44	1
2-Fluorophenol (Surr)	51		20 - 120	03/22/23 08:13	03/24/23 15:44	1
2-Fluorobiphenyl (Surr)	62		34 - 120	03/22/23 08:13	03/24/23 15:44	1
2,4,6-Tribromophenol (Surr)	98		10 - 120	03/22/23 08:13	03/24/23 15:44	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0066	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 18:58	1
Barium	0.020	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 18:58	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 18:58	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 18:58	1
Lead	0.0050	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 18:58	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 18:58	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 18:58	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:15	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		59	18	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2,2-Tetrachloroethane	ND		59	35	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		59	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1,2-Trichloroethane	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1-Dichloroethane	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,1-Dichloroethene	ND		59	19	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2,4-Trichlorobenzene	ND		59	31	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dibromo-3-Chloropropane	ND		120	52	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Ethylene Dibromide	ND		59	19	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichlorobenzene	ND		59	28	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloroethane	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloropropane	ND		59	8.7	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,3-Dichlorobenzene	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
1,4-Dichlorobenzene	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
2-Butanone (MEK)	ND		240	37	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
2-Hexanone	ND		240	62	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
4-Methyl-2-pentanone (MIBK)	ND		240	56	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Acetone	ND		240	57	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Benzene	ND		59	9.9	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Dichlorobromomethane	ND		59	14	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Bromoform	ND		59	54	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Bromomethane	ND		59	39	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Carbon disulfide	ND		59	25	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Carbon tetrachloride	ND		59	24	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chlorobenzene	ND		59	8.2	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloroethane	ND		59	35	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloroform	ND		59	13	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chloromethane	ND		59	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
cis-1,2-Dichloroethene	ND		59	9.4	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
cis-1,3-Dichloropropene	ND		59	29	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Cyclohexane	ND		120	38	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Chlorodibromomethane	ND		59	28	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Dichlorodifluoromethane	ND		59	12	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Ethylbenzene	ND		59	11	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Isopropylbenzene	ND		59	8.9	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methyl acetate	ND		290	40	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methyl tert-butyl ether	ND		59	8.7	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methylcyclohexane	ND		120	16	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Methylene Chloride	ND		120	90	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Styrene	ND		59	12	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Tetrachloroethene	ND		59	23	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Toluene	ND		59	56	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
trans-1,2-Dichloroethene	ND		59	15	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
trans-1,3-Dichloropropene	ND		59	25	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Trichloroethene	ND		59	34	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Trichlorofluoromethane	ND		59	32	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Vinyl chloride	ND		59	29	mg/Kg		03/24/23 22:04	03/28/23 08:39	20
Xylenes, Total	ND		120	21	mg/Kg		03/24/23 22:04	03/28/23 08:39	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	88		56 - 125	03/24/23 22:04	03/28/23 08:39	20
Dibromofluoromethane (Surr)	87		41 - 138	03/24/23 22:04	03/28/23 08:39	20
4-Bromofluorobenzene (Surr)	73		41 - 143	03/24/23 22:04	03/28/23 08:39	20
1,2-Dichloroethane-d4 (Surr)	93		58 - 125	03/24/23 22:04	03/28/23 08:39	20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		6.3	2.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
bis (2-chloroisopropyl) ether	ND		13	1.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4,5-Trichlorophenol	ND		19	8.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4,6-Trichlorophenol	ND		19	8.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dichlorophenol	ND		19	5.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dimethylphenol	ND		19	5.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dinitrophenol	ND		41	18	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,4-Dinitrotoluene	ND		25	7.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2,6-Dinitrotoluene	ND		25	7.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Chloronaphthalene	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Chlorophenol	ND		6.3	1.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Methylnaphthalene	ND		1.9	0.25	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Methylphenol	ND		25	3.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Nitroaniline	ND		25	5.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
2-Nitrophenol	ND		6.3	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3,3'-Dichlorobenzidine	ND		13	5.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3-Nitroaniline	ND		25	6.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4,6-Dinitro-2-methylphenol	ND		41	10	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Bromophenyl phenyl ether	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chloro-3-methylphenol	ND		19	5.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chloroaniline	ND		19	3.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Chlorophenyl phenyl ether	ND		6.3	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Nitroaniline	ND		25	7.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
4-Nitrophenol	ND		41	12	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acenaphthene	ND		1.9	0.36	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acenaphthylene	ND		1.9	0.50	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Acetophenone	ND		13	1.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Anthracene	ND		1.9	0.30	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Atrazine	ND		25	4.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzaldehyde	ND		13	2.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[a]anthracene	0.50	J	1.9	0.43	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[a]pyrene	ND		1.9	1.2	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[b]fluoranthene	1.0	J	1.9	0.81	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[g,h,i]perylene	ND		1.9	0.89	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Benzo[k]fluoranthene	ND		1.9	0.87	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-chloroethoxy)methane	ND		13	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-chloroethyl)ether	ND		13	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Bis(2-ethylhexyl) phthalate	ND		8.8	6.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Butyl benzyl phthalate	3.4	J	8.8	2.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Caprolactam	ND		41	9.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Carbazole	ND		6.3	2.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Chrysene	ND		1.9	0.19	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Dibenz(a,h)anthracene	ND		1.9	0.87	mg/Kg		03/22/23 08:13	03/24/23 17:38	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		6.3	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Diethyl phthalate	ND		8.8	3.9	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Dimethyl phthalate	ND		8.8	1.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Di-n-butyl phthalate	ND		8.8	6.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Di-n-octyl phthalate	ND		8.8	3.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Fluoranthene	0.78	J	1.9	0.56	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Fluorene	ND		1.9	0.34	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorobenzene	ND		1.9	0.36	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorobutadiene	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachlorocyclopentadiene	ND		41	7.8	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Hexachloroethane	ND		6.3	1.1	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Indeno[1,2,3-cd]pyrene	ND		1.9	0.92	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Isophorone	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
N-Nitrosodi-n-propylamine	ND		6.3	1.4	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
N-Nitrosodiphenylamine	ND		6.3	1.5	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Naphthalene	ND		1.9	0.30	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Nitrobenzene	ND		13	1.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Pentachlorophenol	ND		19	7.3	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Phenanthrene	0.96	J	1.9	0.28	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Phenol	ND		6.3	1.0	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
Pyrene	0.82	J	1.9	0.27	mg/Kg		03/22/23 08:13	03/24/23 17:38	5
3 & 4 Methylphenol	ND		50	3.6	mg/Kg		03/22/23 08:13	03/24/23 17:38	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	03/22/23 08:13	03/24/23 17:38	5
Phenol-d5 (Surr)	73		26 - 120	03/22/23 08:13	03/24/23 17:38	5
Nitrobenzene-d5 (Surr)	65		25 - 120	03/22/23 08:13	03/24/23 17:38	5
2-Fluorophenol (Surr)	65		20 - 120	03/22/23 08:13	03/24/23 17:38	5
2-Fluorobiphenyl (Surr)	83		34 - 120	03/22/23 08:13	03/24/23 17:38	5
2,4,6-Tribromophenol (Surr)	88		10 - 120	03/22/23 08:13	03/24/23 17:38	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0075	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 19:02	1
Barium	0.080	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 19:02	1
Cadmium	0.00041	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 19:02	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 19:02	1
Lead	0.0077	J	0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 19:02	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 19:02	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 19:02	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:17	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 11:00	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		9.0	2.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2,2-Tetrachloroethane	ND		9.0	5.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		9.0	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1,2-Trichloroethane	ND		9.0	2.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1-Dichloroethane	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,1-Dichloroethene	ND		9.0	2.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2,4-Trichlorobenzene	ND		9.0	4.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dibromo-3-Chloropropane	ND		18	7.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Ethylene Dibromide	ND		9.0	2.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichlorobenzene	ND		9.0	4.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloroethane	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloropropane	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,3-Dichlorobenzene	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
1,4-Dichlorobenzene	ND		9.0	2.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
2-Butanone (MEK)	ND		36	5.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
2-Hexanone	ND		36	9.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
4-Methyl-2-pentanone (MIBK)	ND		36	8.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Acetone	ND		36	8.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Benzene	ND		9.0	1.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Dichlorobromomethane	ND		9.0	2.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Bromoform	ND		9.0	8.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Bromomethane	ND		9.0	6.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Carbon disulfide	ND		9.0	3.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Carbon tetrachloride	ND		9.0	3.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chlorobenzene	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloroethane	ND		9.0	5.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloroform	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chloromethane	ND		9.0	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
cis-1,2-Dichloroethene	ND		9.0	1.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
cis-1,3-Dichloropropene	ND		9.0	4.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Cyclohexane	ND		18	5.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Chlorodibromomethane	ND		9.0	4.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Dichlorodifluoromethane	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Ethylbenzene	ND		9.0	1.7	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Isopropylbenzene	ND		9.0	1.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methyl acetate	ND		45	6.0	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methyl tert-butyl ether	ND		9.0	1.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methylcyclohexane	ND		18	2.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Methylene Chloride	ND		18	14	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Styrene	ND		9.0	1.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Tetrachloroethene	ND		9.0	3.5	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Toluene	ND		9.0	8.6	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
trans-1,2-Dichloroethene	ND		9.0	2.2	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
trans-1,3-Dichloropropene	ND		9.0	3.8	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Trichloroethene	ND		9.0	5.1	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Trichlorofluoromethane	ND		9.0	4.9	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Vinyl chloride	ND		9.0	4.4	mg/Kg		03/24/23 22:04	03/28/23 09:00	4
Xylenes, Total	ND		18	3.3	mg/Kg		03/24/23 22:04	03/28/23 09:00	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	75		56 - 125	03/24/23 22:04	03/28/23 09:00	4
Dibromofluoromethane (Surr)	81		41 - 138	03/24/23 22:04	03/28/23 09:00	4
4-Bromofluorobenzene (Surr)	64		41 - 143	03/24/23 22:04	03/28/23 09:00	4
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/24/23 22:04	03/28/23 09:00	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
bis (2-chloroisopropyl) ether	ND		6.1	0.61	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4,5-Trichlorophenol	ND		9.1	4.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4,6-Trichlorophenol	ND		9.1	3.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dichlorophenol	ND		9.1	2.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dimethylphenol	ND		9.1	2.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dinitrophenol	ND		20	8.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,4-Dinitrotoluene	ND		12	3.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Chloronaphthalene	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Chlorophenol	ND		3.0	0.61	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Methylnaphthalene	ND		0.91	0.12	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Methylphenol	ND		12	1.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Nitroaniline	ND		12	2.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
2-Nitrophenol	ND		3.0	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3,3'-Dichlorobenzidine	ND		6.1	2.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3-Nitroaniline	ND		12	3.0	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Bromophenyl phenyl ether	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chloro-3-methylphenol	ND		9.1	2.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chloroaniline	ND		9.1	1.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Chlorophenyl phenyl ether	ND		3.0	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Nitroaniline	ND		12	3.6	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
4-Nitrophenol	ND		20	5.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acenaphthene	0.23	J	0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acenaphthylene	ND		0.91	0.24	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Acetophenone	ND		6.1	0.67	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Anthracene	ND		0.91	0.15	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Atrazine	ND		12	2.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzaldehyde	ND		6.1	1.4	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[a]anthracene	0.34	J	0.91	0.21	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[a]pyrene	ND		0.91	0.57	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[b]fluoranthene	ND		0.91	0.39	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[g,h,i]perylene	ND		0.91	0.43	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Benzo[k]fluoranthene	ND		0.91	0.42	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-chloroethoxy)methane	ND		6.1	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-chloroethyl)ether	ND		6.1	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Bis(2-ethylhexyl) phthalate	4.1	J	4.2	3.1	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Caprolactam	ND		20	4.5	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Carbazole	ND		3.0	1.2	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Chrysene	0.37	J	0.91	0.090	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Dibenz(a,h)anthracene	ND		0.91	0.42	mg/Kg		03/22/23 08:13	03/24/23 18:01	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		3.0	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Diethyl phthalate	ND		4.2	1.9	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Dimethyl phthalate	ND		4.2	0.85	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Di-n-butyl phthalate	ND		4.2	3.1	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Fluoranthene	1.2		0.91	0.27	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Fluorene	0.20	J	0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorobenzene	ND		0.91	0.17	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorobutadiene	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachlorocyclopentadiene	ND		20	3.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Hexachloroethane	ND		3.0	0.55	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Indeno[1,2,3-cd]pyrene	ND		0.91	0.45	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Isophorone	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
N-Nitrosodi-n-propylamine	ND		3.0	0.67	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
N-Nitrosodiphenylamine	ND		3.0	0.73	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Naphthalene	ND		0.91	0.15	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Nitrobenzene	ND		6.1	0.79	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Pentachlorophenol	ND		9.1	3.5	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Phenanthrene	0.90	J	0.91	0.14	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Phenol	ND		3.0	0.48	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
Pyrene	1.2		0.91	0.13	mg/Kg		03/22/23 08:13	03/24/23 18:01	4
3 & 4 Methylphenol	ND		24	1.8	mg/Kg		03/22/23 08:13	03/24/23 18:01	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	101		46 - 137	03/22/23 08:13	03/24/23 18:01	4
Phenol-d5 (Surr)	67		26 - 120	03/22/23 08:13	03/24/23 18:01	4
Nitrobenzene-d5 (Surr)	54		25 - 120	03/22/23 08:13	03/24/23 18:01	4
2-Fluorophenol (Surr)	61		20 - 120	03/22/23 08:13	03/24/23 18:01	4
2-Fluorobiphenyl (Surr)	80		34 - 120	03/22/23 08:13	03/24/23 18:01	4
2,4,6-Tribromophenol (Surr)	65		10 - 120	03/22/23 08:13	03/24/23 18:01	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J B	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 19:15	1
Barium	0.066	J B	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 19:15	1
Cadmium	0.00038	J	0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 19:15	1
Chromium	ND	^+	0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 19:15	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 19:15	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 19:15	1
Silver	ND	^+	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 19:15	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 17:19	1

Method: Part Size Red - Particle Size Reduction Preparation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/20/23 12:54	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	82	84	77	86
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	73 *3	95 *3	77 *3	122 *3
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	122	106	127	117
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	119	102	119	118
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	82	76	80	83
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	128 S1+	108	138	116
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	86	86	69	87
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	80	83	73	92
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	121	105	126	116
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	80	89	73	94
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	84	84	70	94
240-182202-13	WC-SB1188-SOIL + DEBRIS	122	112	127	128 S1+
240-182202-14	WC-AMU112-SOIL + DEBRIS	90	86	59	98
240-182202-15	WC-SB2655-SOIL + DEBRIS	107	83	53	89
240-182202-16	WC-SB2455-SOIL + DEBRIS	107	95	54	107
240-182202-18	WC-SB2418-ABSORBENTS	79	83	65	84
240-182202-19	WC-SB1833-ABSORBENTS	80	80	63	87
240-182202-20	WC-SB2446-ABSORBENTS	85	85	70	90
240-182202-21	WC-SB1450-ABSORBENTS	88	87	73	93
240-182202-22	WC-SB1905-ABSORBENTS	75	81	64	87
240-182202-22 MS	WC-SB1905-ABSORBENTS	81	83	76	80
240-182202-22 MSD	WC-SB1905-ABSORBENTS	83	80	77	81
LCS 240-566108/2-A	Lab Control Sample	81	83	77	82
LCS 240-566133/6	Lab Control Sample	91	88	86	88
LCS 240-566249/3	Lab Control Sample	113	105	113	110
LCS 240-566719/2-A	Lab Control Sample	82	79	75	79
MB 240-566108/1-A	Method Blank	81	77	69	86
MB 240-566125/2-A	Method Blank	80	80	68	87
MB 240-566125/3-A	Method Blank	114	105	116	116
MB 240-566133/7	Method Blank	79	78	71	82
MB 240-566719/1-A	Method Blank	80	80	62	84

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-566367/10	Lab Control Sample	91	92	101	97

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	95	98	108	100
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	87	86	92	92
240-182202-17	WC-COMP-SOIL + DEBRIS	97	96	108	102
LB 240-566129/1-A MB	Method Blank	89	93	100	98

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	87	61	40	45	61	48
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	88	64	53	62	73	52
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	85	58	42	45	63	55
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	93	53	39	44	57	55
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	83	47	33	38	50	42
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	89	69	51	54	80	61
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	107	65	48	54	77	98
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	94	59	46	53	64	79
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	94	50	42	48	54	87
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	95	51	42	49	48	68
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	101	78	66	77	80	96
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	94	52	41	48	56	90
240-182202-13	WC-SB1188-SOIL + DEBRIS	89	62	40	55	66	102
240-182202-14	WC-AMU112-SOIL + DEBRIS	67	67	52	65	61	83
240-182202-15	WC-SB2655-SOIL + DEBRIS	82	68	54	64	72	86
240-182202-16	WC-SB2455-SOIL + DEBRIS	92	51	42	47	57	96
240-182202-18	WC-SB2418-ABSORBENTS	97	45	38	43	58	93
240-182202-19	WC-SB1833-ABSORBENTS	99	67	60	64	75	86
240-182202-20	WC-SB2446-ABSORBENTS	108	53	46	51	62	98
240-182202-21	WC-SB1450-ABSORBENTS	106	73	65	65	83	88
240-182202-22	WC-SB1905-ABSORBENTS	101	67	54	61	80	65
LCS 240-566295/2-A	Lab Control Sample	124	59	55	60	63	112
MB 240-566295/1-A	Method Blank	103	36	33	33	40	33

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-566221/9-A	Lab Control Sample	112	68	84	76	94	123 S1+
MB 240-566221/8-A	Method Blank	121	65	81	73	93	116

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	118	61	76	70	91	114
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	115	52	66	57	84	112
240-182202-17	WC-COMP-SOIL + DEBRIS	118	62	80	72	95	110

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
 PHL = Phenol-d5 (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 2FP = 2-Fluorophenol (Surr)
 FBP = 2-Fluorobiphenyl (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-566222/6-A	Lab Control Sample	69	67	65	71
MB 240-566222/5-A	Method Blank	71	69	69	73

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	80	79	63	67
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	84	75	65	67
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	76	69	66	64

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182202-17	WC-COMP-SOIL + DEBRIS	74	71	66	68

Surrogate Legend
 DCBP = DCB Decachlorobiphenyl
 TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (10-149)	TCX2 (10-149)	DCBP1 (10-174)	DCBP2 (10-174)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	88	88	86	82
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	88		88	
240-182202-17	WC-COMP-SOIL + DEBRIS	86		74	
LCS 240-566161/2-A	Lab Control Sample	98		83	
MB 240-566161/1-A	Method Blank	86		75	

Surrogate Legend
 TCX = Tetrachloro-m-xylene
 DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-356959/3-A	Lab Control Sample	58	64
LCSD 410-356959/4-A	Lab Control Sample Dup	60	67
MB 410-356959/2-A	Method Blank	52	57

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (26-136)	DCPAA2 (26-136)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	53	61
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	57	65
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	53	59
240-182202-17	WC-COMP-SOIL + DEBRIS	51	57

Surrogate Legend
 DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-566108/1-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566108

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Acetone	ND		1.0	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Benzene	ND		0.25	0.042	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Bromoform	ND		0.25	0.23	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloroform	ND		0.25	0.054	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Styrene	ND		0.25	0.052	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Toluene	ND		0.25	0.24	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/20/23 14:08	03/21/23 15:06	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/20/23 14:08	03/21/23 15:06	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566108/1-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566108

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	81		56 - 125	03/20/23 14:08	03/21/23 15:06	1
Dibromofluoromethane (Surr)	77		41 - 138	03/20/23 14:08	03/21/23 15:06	1
4-Bromofluorobenzene (Surr)	69		41 - 143	03/20/23 14:08	03/21/23 15:06	1
1,2-Dichloroethane-d4 (Surr)	86		58 - 125	03/20/23 14:08	03/21/23 15:06	1

Lab Sample ID: LCS 240-566108/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	1.25	1.22		mg/Kg		98	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.29		mg/Kg		104	64 - 148
1,1,2-Trichloroethane	1.25	1.28		mg/Kg		102	79 - 120
1,1-Dichloroethane	1.25	1.18		mg/Kg		94	74 - 121
1,1-Dichloroethene	1.25	1.19		mg/Kg		95	68 - 141
1,2,4-Trichlorobenzene	1.25	0.988		mg/Kg		79	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.852		mg/Kg		68	52 - 133
Ethylene Dibromide	1.25	1.22		mg/Kg		98	80 - 121
1,2-Dichlorobenzene	1.25	1.18		mg/Kg		95	73 - 120
1,2-Dichloroethane	1.25	1.29		mg/Kg		103	71 - 123
1,2-Dichloropropane	1.25	1.22		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	1.25	1.09		mg/Kg		87	73 - 120
1,4-Dichlorobenzene	1.25	1.10		mg/Kg		88	74 - 120
2-Butanone (MEK)	2.50	2.92		mg/Kg		117	63 - 142
2-Hexanone	2.50	2.51		mg/Kg		100	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.26		mg/Kg		90	62 - 142
Acetone	2.50	3.35		mg/Kg		134	58 - 160
Benzene	1.25	1.23		mg/Kg		98	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		86	71 - 138
Bromoform	1.25	0.913		mg/Kg		73	57 - 140
Bromomethane	1.25	0.810		mg/Kg		65	10 - 171
Carbon disulfide	1.25	0.935		mg/Kg		75	43 - 152
Carbon tetrachloride	1.25	1.20		mg/Kg		96	64 - 144
Chlorobenzene	1.25	1.18		mg/Kg		94	80 - 120
Chloroethane	1.25	1.02		mg/Kg		82	11 - 164
Chloroform	1.25	1.31		mg/Kg		105	78 - 120
Chloromethane	1.25	0.800		mg/Kg		64	41 - 142
cis-1,2-Dichloroethene	1.25	1.23		mg/Kg		99	78 - 124
cis-1,3-Dichloropropene	1.25	0.936		mg/Kg		75	70 - 133
Cyclohexane	1.25	1.17		mg/Kg		94	65 - 137
Chlorodibromomethane	1.25	0.999		mg/Kg		80	68 - 131
Dichlorodifluoromethane	1.25	0.795		mg/Kg		64	21 - 150
Ethylbenzene	1.25	1.16		mg/Kg		93	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		98	80 - 130
Methyl acetate	2.50	2.65		mg/Kg		106	60 - 133
Methyl tert-butyl ether	1.25	1.17		mg/Kg		94	70 - 130
Methylcyclohexane	1.25	1.11		mg/Kg		89	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566108/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	1.25	1.09		mg/Kg		87	71 - 124
Styrene	1.25	1.25		mg/Kg		100	75 - 140
Tetrachloroethene	1.25	1.15		mg/Kg		92	76 - 127
Toluene	1.25	1.23		mg/Kg		98	80 - 120
trans-1,2-Dichloroethene	1.25	1.23		mg/Kg		98	76 - 130
trans-1,3-Dichloropropene	1.25	0.912		mg/Kg		73	61 - 121
Trichloroethene	1.25	1.14		mg/Kg		91	74 - 130
Trichlorofluoromethane	1.25	1.06		mg/Kg		85	50 - 154
Vinyl chloride	1.25	0.984		mg/Kg		79	49 - 146
Xylenes, Total	2.50	2.42		mg/Kg		97	80 - 122
m-Xylene & p-Xylene	1.25	1.16		mg/Kg		93	80 - 122
o-Xylene	1.25	1.26		mg/Kg		101	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	83		41 - 138
4-Bromofluorobenzene (Surr)	77		41 - 143
1,2-Dichloroethane-d4 (Surr)	82		58 - 125

Lab Sample ID: MB 240-566125/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Acetone	ND		0.025	0.021	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/21/23 10:27	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/2-A
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/20/23 17:03	03/21/23 10:27	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/20/23 17:03	03/21/23 10:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125	03/20/23 17:03	03/21/23 10:27	1
Dibromofluoromethane (Surr)	80		41 - 138	03/20/23 17:03	03/21/23 10:27	1
4-Bromofluorobenzene (Surr)	68		41 - 143	03/20/23 17:03	03/21/23 10:27	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/20/23 17:03	03/21/23 10:27	1

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0030	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethane	ND		0.0050	0.00096	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,1-Dichloroethene	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0044	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylene Dibromide	ND		0.0050	0.0016	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichlorobenzene	ND		0.0050	0.0024	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloropropane	ND		0.0050	0.00074	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566125/3-A
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566125

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,3-Dichlorobenzene	ND		0.0050	0.00092	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
1,4-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Butanone (MEK)	ND		0.020	0.0031	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
2-Hexanone	ND		0.020	0.0053	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0048	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Acetone	0.00954	J	0.020	0.0049	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Benzene	ND		0.0050	0.00084	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorobromomethane	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromoform	ND		0.0050	0.0046	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Bromomethane	ND		0.0050	0.0033	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon disulfide	ND		0.0050	0.0022	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Carbon tetrachloride	ND		0.0050	0.0020	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorobenzene	ND		0.0050	0.00070	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroethane	ND		0.0050	0.0030	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloroform	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chloromethane	ND		0.0050	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,2-Dichloroethene	ND		0.0050	0.00080	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
cis-1,3-Dichloropropene	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Cyclohexane	ND		0.010	0.0033	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Chlorodibromomethane	ND		0.0050	0.0023	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Dichlorodifluoromethane	ND		0.0050	0.0011	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Ethylbenzene	ND		0.0050	0.00094	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Isopropylbenzene	ND		0.0050	0.00076	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methyl tert-butyl ether	ND		0.0050	0.00074	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylcyclohexane	ND		0.010	0.0013	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Methylene Chloride	ND		0.010	0.0077	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Styrene	ND		0.0050	0.0010	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Tetrachloroethene	ND		0.0050	0.0019	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Toluene	ND		0.0050	0.0048	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,2-Dichloroethene	ND		0.0050	0.0012	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
trans-1,3-Dichloropropene	ND		0.0050	0.0021	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichloroethene	ND		0.0050	0.0029	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Vinyl chloride	ND		0.0050	0.0025	mg/Kg		03/20/23 17:03	03/21/23 19:25	1
Xylenes, Total	ND		0.010	0.0018	mg/Kg		03/20/23 17:03	03/21/23 19:25	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	114		56 - 125	03/20/23 17:03	03/21/23 19:25	1
Dibromofluoromethane (Surr)	105		41 - 138	03/20/23 17:03	03/21/23 19:25	1
4-Bromofluorobenzene (Surr)	116		41 - 143	03/20/23 17:03	03/21/23 19:25	1
1,2-Dichloroethane-d4 (Surr)	116		58 - 125	03/20/23 17:03	03/21/23 19:25	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566133/7
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg			03/21/23 05:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg			03/21/23 05:49	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg			03/21/23 05:49	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg			03/21/23 05:49	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg			03/21/23 05:49	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg			03/21/23 05:49	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg			03/21/23 05:49	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg			03/21/23 05:49	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg			03/21/23 05:49	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg			03/21/23 05:49	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg			03/21/23 05:49	1
2-Hexanone	ND		0.020	0.0041	mg/Kg			03/21/23 05:49	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg			03/21/23 05:49	1
Acetone	ND		0.025	0.021	mg/Kg			03/21/23 05:49	1
Benzene	ND		0.0050	0.00070	mg/Kg			03/21/23 05:49	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg			03/21/23 05:49	1
Bromoform	ND		0.0050	0.0024	mg/Kg			03/21/23 05:49	1
Bromomethane	ND		0.0050	0.0042	mg/Kg			03/21/23 05:49	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg			03/21/23 05:49	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg			03/21/23 05:49	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg			03/21/23 05:49	1
Chloroethane	ND		0.0050	0.0027	mg/Kg			03/21/23 05:49	1
Chloroform	ND		0.0050	0.00079	mg/Kg			03/21/23 05:49	1
Chloromethane	ND		0.0050	0.0023	mg/Kg			03/21/23 05:49	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg			03/21/23 05:49	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg			03/21/23 05:49	1
Cyclohexane	ND		0.010	0.0014	mg/Kg			03/21/23 05:49	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg			03/21/23 05:49	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg			03/21/23 05:49	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg			03/21/23 05:49	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg			03/21/23 05:49	1
Methyl acetate	ND		0.025	0.0034	mg/Kg			03/21/23 05:49	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg			03/21/23 05:49	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg			03/21/23 05:49	1
Methylene Chloride	ND		0.025	0.012	mg/Kg			03/21/23 05:49	1
Styrene	ND		0.0050	0.0012	mg/Kg			03/21/23 05:49	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg			03/21/23 05:49	1
Toluene	ND		0.0050	0.00077	mg/Kg			03/21/23 05:49	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg			03/21/23 05:49	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg			03/21/23 05:49	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg			03/21/23 05:49	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg			03/21/23 05:49	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg			03/21/23 05:49	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg			03/21/23 05:49	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566133/7
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	79		56 - 125		03/21/23 05:49	1
Dibromofluoromethane (Surr)	78		41 - 138		03/21/23 05:49	1
4-Bromofluorobenzene (Surr)	71		41 - 143		03/21/23 05:49	1
1,2-Dichloroethane-d4 (Surr)	82		58 - 125		03/21/23 05:49	1

Lab Sample ID: LCS 240-566133/6
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0308		mg/Kg		123	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0292		mg/Kg		117	66 - 129
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0343		mg/Kg		137	64 - 148
1,1,2-Trichloroethane	0.0250	0.0305	*+	mg/Kg		122	79 - 120
1,1-Dichloroethane	0.0250	0.0294		mg/Kg		118	74 - 121
1,1-Dichloroethene	0.0250	0.0313		mg/Kg		125	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0255		mg/Kg		102	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0229		mg/Kg		91	52 - 133
Ethylene Dibromide	0.0250	0.0296		mg/Kg		118	80 - 121
1,2-Dichlorobenzene	0.0250	0.0285		mg/Kg		114	73 - 120
1,2-Dichloroethane	0.0250	0.0295		mg/Kg		118	71 - 123
1,2-Dichloropropane	0.0250	0.0292		mg/Kg		117	76 - 126
1,3-Dichlorobenzene	0.0250	0.0286		mg/Kg		114	73 - 120
1,4-Dichlorobenzene	0.0250	0.0281		mg/Kg		113	74 - 120
2-Butanone (MEK)	0.0500	0.0655		mg/Kg		131	63 - 142
2-Hexanone	0.0500	0.0572		mg/Kg		114	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0550		mg/Kg		110	62 - 142
Acetone	0.0500	0.0801		mg/Kg		160	58 - 160
Benzene	0.0250	0.0298		mg/Kg		119	76 - 121
Dichlorobromomethane	0.0250	0.0294		mg/Kg		118	71 - 138
Bromoform	0.0250	0.0255		mg/Kg		102	57 - 140
Bromomethane	0.0250	0.0280		mg/Kg		112	10 - 171
Carbon disulfide	0.0250	0.0288		mg/Kg		115	43 - 152
Carbon tetrachloride	0.0250	0.0312		mg/Kg		125	64 - 144
Chlorobenzene	0.0250	0.0285		mg/Kg		114	80 - 120
Chloroethane	0.0250	0.0250		mg/Kg		100	11 - 164
Chloroform	0.0250	0.0298		mg/Kg		119	78 - 120
Chloromethane	0.0250	0.0205		mg/Kg		82	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0285		mg/Kg		114	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0265		mg/Kg		106	70 - 133
Cyclohexane	0.0250	0.0329		mg/Kg		132	65 - 137
Chlorodibromomethane	0.0250	0.0276		mg/Kg		111	68 - 131
Dichlorodifluoromethane	0.0250	0.0200		mg/Kg		80	21 - 150
Ethylbenzene	0.0250	0.0297		mg/Kg		119	80 - 120
Isopropylbenzene	0.0250	0.0311		mg/Kg		124	80 - 130
Methyl acetate	0.0500	0.0522		mg/Kg		104	60 - 133
Methyl tert-butyl ether	0.0250	0.0268		mg/Kg		107	70 - 130
Methylcyclohexane	0.0250	0.0314		mg/Kg		126	70 - 138

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566133/6
Matrix: Solid
Analysis Batch: 566133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0239	J	mg/Kg		96	71 - 124
Styrene	0.0250	0.0318		mg/Kg		127	75 - 140
Tetrachloroethene	0.0250	0.0305		mg/Kg		122	76 - 127
Toluene	0.0250	0.0304	*+	mg/Kg		122	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0311		mg/Kg		124	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0258		mg/Kg		103	61 - 121
Trichloroethene	0.0250	0.0296		mg/Kg		119	74 - 130
Trichlorofluoromethane	0.0250	0.0292		mg/Kg		117	50 - 154
Vinyl chloride	0.0250	0.0273		mg/Kg		109	49 - 146
Xylenes, Total	0.0500	0.0613	*+	mg/Kg		123	80 - 122
m-Xylene & p-Xylene	0.0250	0.0302		mg/Kg		121	80 - 122
o-Xylene	0.0250	0.0311		mg/Kg		124	80 - 124

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	91		56 - 125
Dibromofluoromethane (Surr)	88		41 - 138
4-Bromofluorobenzene (Surr)	86		41 - 143
1,2-Dichloroethane-d4 (Surr)	88		58 - 125

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0278		mg/Kg		111	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0277		mg/Kg		111	66 - 129
1,1,1,2-Trichloro-1,1,2-trifluoroethane	0.0250	0.0241		mg/Kg		96	64 - 148
1,1,2-Trichloroethane	0.0250	0.0271		mg/Kg		109	79 - 120
1,1-Dichloroethane	0.0250	0.0243		mg/Kg		97	74 - 121
1,1-Dichloroethene	0.0250	0.0263		mg/Kg		105	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0251		mg/Kg		101	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0246		mg/Kg		98	52 - 133
Ethylene Dibromide	0.0250	0.0261		mg/Kg		105	80 - 121
1,2-Dichlorobenzene	0.0250	0.0261		mg/Kg		104	73 - 120
1,2-Dichloroethane	0.0250	0.0259		mg/Kg		104	71 - 123
1,2-Dichloropropane	0.0250	0.0243		mg/Kg		97	76 - 126
1,3-Dichlorobenzene	0.0250	0.0262		mg/Kg		105	73 - 120
1,4-Dichlorobenzene	0.0250	0.0264		mg/Kg		106	74 - 120
2-Butanone (MEK)	0.0500	0.0524		mg/Kg		105	63 - 142
2-Hexanone	0.0500	0.0552		mg/Kg		110	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0537		mg/Kg		107	62 - 142
Acetone	0.0500	0.0703		mg/Kg		141	58 - 160
Benzene	0.0250	0.0256		mg/Kg		102	76 - 121
Dichlorobromomethane	0.0250	0.0252		mg/Kg		101	71 - 138
Bromoform	0.0250	0.0232		mg/Kg		93	57 - 140
Bromomethane	0.0250	0.0252		mg/Kg		101	10 - 171
Carbon disulfide	0.0250	0.0248		mg/Kg		99	43 - 152
Carbon tetrachloride	0.0250	0.0278		mg/Kg		111	64 - 144

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566249/3
Matrix: Solid
Analysis Batch: 566249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene	0.0250	0.0258		mg/Kg		103	80 - 120
Chloroethane	0.0250	0.0223		mg/Kg		89	11 - 164
Chloroform	0.0250	0.0268		mg/Kg		107	78 - 120
Chloromethane	0.0250	0.0216		mg/Kg		86	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0258		mg/Kg		103	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0246		mg/Kg		99	70 - 133
Cyclohexane	0.0250	0.0243		mg/Kg		97	65 - 137
Chlorodibromomethane	0.0250	0.0252		mg/Kg		101	68 - 131
Dichlorodifluoromethane	0.0250	0.0278		mg/Kg		111	21 - 150
Ethylbenzene	0.0250	0.0264		mg/Kg		105	80 - 120
Isopropylbenzene	0.0250	0.0271		mg/Kg		108	80 - 130
Methyl acetate	0.0500	0.0451		mg/Kg		90	60 - 133
Methyl tert-butyl ether	0.0250	0.0249		mg/Kg		99	70 - 130
Methylcyclohexane	0.0250	0.0248		mg/Kg		99	70 - 138
Methylene Chloride	0.0250	0.0262		mg/Kg		105	71 - 124
Styrene	0.0250	0.0267		mg/Kg		107	75 - 140
Tetrachloroethene	0.0250	0.0267		mg/Kg		107	76 - 127
Toluene	0.0250	0.0269		mg/Kg		108	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0248		mg/Kg		99	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0269		mg/Kg		108	61 - 121
Trichloroethene	0.0250	0.0247		mg/Kg		99	74 - 130
Trichlorofluoromethane	0.0250	0.0263		mg/Kg		105	50 - 154
Vinyl chloride	0.0250	0.0230		mg/Kg		92	49 - 146
Xylenes, Total	0.0500	0.0522		mg/Kg		104	80 - 122
m-Xylene & p-Xylene	0.0250	0.0262		mg/Kg		105	80 - 122
o-Xylene	0.0250	0.0260		mg/Kg		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	113		56 - 125
Dibromofluoromethane (Surr)	105		41 - 138
4-Bromofluorobenzene (Surr)	113		41 - 143
1,2-Dichloroethane-d4 (Surr)	110		58 - 125

Lab Sample ID: LCS 240-566367/10
Matrix: Solid
Analysis Batch: 566367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	0.935		mg/L		94	74 - 127
1,2-Dichloroethane	1.00	1.01		mg/L		101	72 - 120
2-Butanone (MEK)	2.00	2.22		mg/L		111	68 - 130
Benzene	1.00	0.975		mg/L		98	80 - 121
Carbon tetrachloride	1.00	0.895		mg/L		89	69 - 120
Chlorobenzene	1.00	0.937		mg/L		94	80 - 120
Chloroform	1.00	0.969		mg/L		97	75 - 120
Tetrachloroethene	1.00	0.910		mg/L		91	74 - 120
Trichloroethene	1.00	0.892		mg/L		89	75 - 120
Vinyl chloride	1.00	0.801		mg/L		80	53 - 147

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566367/10
Matrix: Solid
Analysis Batch: 566367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	91		80 - 120
Dibromofluoromethane (Surr)	92		71 - 121
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		76 - 120

Lab Sample ID: MB 240-566719/1-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566719

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Acetone	ND		1.0	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Benzene	ND		0.25	0.042	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Bromoform	ND		0.25	0.23	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloroform	ND		0.25	0.054	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/24/23 22:04	03/25/23 12:01	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566719/1-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566719

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Styrene	ND		0.25	0.052	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Toluene	ND		0.25	0.24	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/24/23 22:04	03/25/23 12:01	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/24/23 22:04	03/25/23 12:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	80		56 - 125	03/24/23 22:04	03/25/23 12:01	1
Dibromofluoromethane (Surr)	80		41 - 138	03/24/23 22:04	03/25/23 12:01	1
4-Bromofluorobenzene (Surr)	62		41 - 143	03/24/23 22:04	03/25/23 12:01	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125	03/24/23 22:04	03/25/23 12:01	1

Lab Sample ID: LCS 240-566719/2-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	1.25	1.20		mg/Kg		96	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.28		mg/Kg		102	64 - 148
1,1,2-Trichloroethane	1.25	1.33		mg/Kg		106	79 - 120
1,1-Dichloroethane	1.25	1.08		mg/Kg		86	74 - 121
1,1-Dichloroethene	1.25	1.11		mg/Kg		89	68 - 141
1,2,4-Trichlorobenzene	1.25	0.903		mg/Kg		72	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.803		mg/Kg		64	52 - 133
Ethylene Dibromide	1.25	1.21		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	1.25	1.15		mg/Kg		92	73 - 120
1,2-Dichloroethane	1.25	1.25		mg/Kg		100	71 - 123
1,2-Dichloropropane	1.25	1.15		mg/Kg		92	76 - 126
1,3-Dichlorobenzene	1.25	1.10		mg/Kg		88	73 - 120
1,4-Dichlorobenzene	1.25	1.11		mg/Kg		89	74 - 120
2-Butanone (MEK)	2.50	2.65		mg/Kg		106	63 - 142
2-Hexanone	2.50	2.11		mg/Kg		85	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.04		mg/Kg		82	62 - 142
Acetone	2.50	2.79		mg/Kg		111	58 - 160
Benzene	1.25	1.21		mg/Kg		97	76 - 121
Dichlorobromomethane	1.25	1.10		mg/Kg		88	71 - 138
Bromoform	1.25	0.994		mg/Kg		80	57 - 140
Bromomethane	1.25	0.699		mg/Kg		56	10 - 171
Carbon disulfide	1.25	0.815		mg/Kg		65	43 - 152
Carbon tetrachloride	1.25	1.21		mg/Kg		97	64 - 144
Chlorobenzene	1.25	1.20		mg/Kg		96	80 - 120
Chloroethane	1.25	0.859		mg/Kg		69	11 - 164

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566719/2-A
Matrix: Solid
Analysis Batch: 566725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroform	1.25	1.24		mg/Kg		100	78 - 120
Chloromethane	1.25	0.596		mg/Kg		48	41 - 142
cis-1,2-Dichloroethene	1.25	1.18		mg/Kg		94	78 - 124
cis-1,3-Dichloropropene	1.25	0.947		mg/Kg		76	70 - 133
Cyclohexane	1.25	1.06		mg/Kg		85	65 - 137
Chlorodibromomethane	1.25	1.02		mg/Kg		82	68 - 131
Dichlorodifluoromethane	1.25	0.636		mg/Kg		51	21 - 150
Ethylbenzene	1.25	1.22		mg/Kg		97	80 - 120
Isopropylbenzene	1.25	1.21		mg/Kg		97	80 - 130
Methyl acetate	2.50	2.31		mg/Kg		93	60 - 133
Methyl tert-butyl ether	1.25	1.10		mg/Kg		88	70 - 130
Methylcyclohexane	1.25	1.14		mg/Kg		91	70 - 138
Methylene Chloride	1.25	0.924		mg/Kg		74	71 - 124
Styrene	1.25	1.29		mg/Kg		103	75 - 140
Tetrachloroethene	1.25	1.25		mg/Kg		100	76 - 127
Toluene	1.25	1.24		mg/Kg		100	80 - 120
trans-1,2-Dichloroethene	1.25	1.14		mg/Kg		92	76 - 130
trans-1,3-Dichloropropene	1.25	0.946		mg/Kg		76	61 - 121
Trichloroethene	1.25	1.21		mg/Kg		97	74 - 130
Trichlorofluoromethane	1.25	0.961		mg/Kg		77	50 - 154
Vinyl chloride	1.25	0.769		mg/Kg		62	49 - 146
Xylenes, Total	2.50	2.52		mg/Kg		101	80 - 122
m-Xylene & p-Xylene	1.25	1.22		mg/Kg		98	80 - 122
o-Xylene	1.25	1.30		mg/Kg		104	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	82		56 - 125
Dibromofluoromethane (Surr)	79		41 - 138
4-Bromofluorobenzene (Surr)	75		41 - 143
1,2-Dichloroethane-d4 (Surr)	79		58 - 125

Lab Sample ID: 240-182202-22 MS
Matrix: Solid
Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS
Prep Type: Total/NA
Prep Batch: 566719

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		44.9	46.6		mg/Kg		104	46 - 144
1,1,2,2-Tetrachloroethane	ND		44.9	42.1		mg/Kg		94	26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		44.9	47.9		mg/Kg		107	35 - 164
1,1,2-Trichloroethane	ND		44.9	46.2		mg/Kg		103	26 - 149
1,1-Dichloroethane	ND		44.9	41.1		mg/Kg		92	46 - 135
1,1-Dichloroethene	ND		44.9	43.0		mg/Kg		96	44 - 160
1,2,4-Trichlorobenzene	ND		44.9	37.8		mg/Kg		84	10 - 120
1,2-Dibromo-3-Chloropropane	ND		44.9	27.5		mg/Kg		61	12 - 144
Ethylene Dibromide	ND		44.9	43.7		mg/Kg		97	31 - 142
1,2-Dichlorobenzene	ND		44.9	43.6		mg/Kg		97	10 - 126
1,2-Dichloroethane	ND		44.9	44.6		mg/Kg		99	40 - 132
1,2-Dichloropropane	ND		44.9	40.6		mg/Kg		90	45 - 133

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MS

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
1,3-Dichlorobenzene	ND		44.9	43.6		mg/Kg		97	10 - 131
1,4-Dichlorobenzene	ND		44.9	42.0		mg/Kg		94	10 - 129
2-Butanone (MEK)	ND		89.8	87.1		mg/Kg		97	30 - 157
2-Hexanone	ND		89.8	74.6		mg/Kg		83	20 - 166
4-Methyl-2-pentanone (MIBK)	ND		89.8	69.3		mg/Kg		77	31 - 159
Acetone	ND		89.8	99.1		mg/Kg		110	35 - 167
Benzene	ND		44.9	44.5		mg/Kg		99	39 - 134
Dichlorobromomethane	ND		44.9	42.9		mg/Kg		96	32 - 146
Bromoform	ND		44.9	36.5		mg/Kg		81	12 - 144
Bromomethane	ND		44.9	40.7		mg/Kg		91	10 - 161
Carbon disulfide	ND		44.9	36.9		mg/Kg		82	24 - 153
Carbon tetrachloride	ND		44.9	46.9		mg/Kg		105	37 - 145
Chlorobenzene	ND		44.9	44.3		mg/Kg		99	18 - 134
Chloroethane	ND		44.9	35.0		mg/Kg		78	14 - 159
Chloroform	ND		44.9	45.6		mg/Kg		102	43 - 134
Chloromethane	ND		44.9	24.5		mg/Kg		55	32 - 151
cis-1,2-Dichloroethene	ND		44.9	44.1		mg/Kg		98	48 - 132
cis-1,3-Dichloropropene	ND		44.9	35.8		mg/Kg		80	23 - 139
Cyclohexane	ND		44.9	39.4		mg/Kg		88	31 - 147
Chlorodibromomethane	ND		44.9	39.8		mg/Kg		89	25 - 143
Dichlorodifluoromethane	ND		44.9	31.7		mg/Kg		70	16 - 157
Ethylbenzene	ND		44.9	45.3		mg/Kg		101	17 - 137
Isopropylbenzene	ND		44.9	46.0		mg/Kg		102	10 - 146
Methyl acetate	ND		89.8	76.9		mg/Kg		86	13 - 164
Methyl tert-butyl ether	ND		44.9	38.9		mg/Kg		87	55 - 134
Methylcyclohexane	ND		44.9	41.9		mg/Kg		93	20 - 153
Methylene Chloride	ND		44.9	36.6		mg/Kg		81	38 - 145
Styrene	ND		44.9	47.3		mg/Kg		105	10 - 149
Tetrachloroethene	ND		44.9	47.1		mg/Kg		105	19 - 147
Toluene	ND		44.9	45.3		mg/Kg		101	30 - 137
trans-1,2-Dichloroethene	ND		44.9	44.0		mg/Kg		98	41 - 145
trans-1,3-Dichloropropene	ND		44.9	34.6		mg/Kg		77	19 - 130
Trichloroethene	ND		44.9	44.2		mg/Kg		98	21 - 158
Trichlorofluoromethane	ND		44.9	42.6		mg/Kg		95	36 - 161
Vinyl chloride	ND		44.9	34.0		mg/Kg		76	32 - 163
Xylenes, Total	ND		89.8	93.9		mg/Kg		105	17 - 138
m-Xylene & p-Xylene	ND		44.9	45.6		mg/Kg		102	10 - 141
o-Xylene	ND		44.9	48.3		mg/Kg		108	18 - 139

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	81		56 - 125
Dibromofluoromethane (Surr)	83		41 - 138
4-Bromofluorobenzene (Surr)	76		41 - 143
1,2-Dichloroethane-d4 (Surr)	80		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MSD

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample	Sample Qualifier	Spike Added	MSD	MSD Qualifier	Unit	D	%Rec	%Rec	RPD	RPD
	Result			Result					Limits		Limit
1,1,1-Trichloroethane	ND		44.9	38.0		mg/Kg		85	46 - 144	20	37
1,1,2,2-Tetrachloroethane	ND		44.9	38.9		mg/Kg		87	26 - 159	8	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		44.9	40.8		mg/Kg		91	35 - 164	16	37
1,1,2-Trichloroethane	ND		44.9	40.5		mg/Kg		90	26 - 149	13	40
1,1-Dichloroethane	ND		44.9	37.2		mg/Kg		83	46 - 135	10	36
1,1-Dichloroethene	ND		44.9	39.7		mg/Kg		88	44 - 160	8	37
1,2,4-Trichlorobenzene	ND		44.9	31.5		mg/Kg		70	10 - 120	18	40
1,2-Dibromo-3-Chloropropane	ND		44.9	21.5		mg/Kg		48	12 - 144	24	40
Ethylene Dibromide	ND		44.9	38.3		mg/Kg		85	31 - 142	13	40
1,2-Dichlorobenzene	ND		44.9	33.9		mg/Kg		75	10 - 126	25	40
1,2-Dichloroethane	ND		44.9	39.5		mg/Kg		88	40 - 132	12	35
1,2-Dichloropropane	ND		44.9	37.6		mg/Kg		84	45 - 133	8	37
1,3-Dichlorobenzene	ND		44.9	36.8		mg/Kg		82	10 - 131	17	40
1,4-Dichlorobenzene	ND		44.9	36.1		mg/Kg		80	10 - 129	15	40
2-Butanone (MEK)	ND		89.8	91.3		mg/Kg		102	30 - 157	5	40
2-Hexanone	ND		89.8	79.5		mg/Kg		89	20 - 166	6	40
4-Methyl-2-pentanone (MIBK)	ND		89.8	71.8		mg/Kg		80	31 - 159	3	40
Acetone	ND		89.8	110		mg/Kg		123	35 - 167	11	40
Benzene	ND		44.9	38.5		mg/Kg		86	39 - 134	14	40
Dichlorobromomethane	ND		44.9	35.7		mg/Kg		80	32 - 146	18	39
Bromoform	ND		44.9	30.9		mg/Kg		69	12 - 144	16	40
Bromomethane	ND		44.9	40.4		mg/Kg		90	10 - 161	1	40
Carbon disulfide	ND		44.9	33.9		mg/Kg		76	24 - 153	8	40
Carbon tetrachloride	ND		44.9	37.6		mg/Kg		84	37 - 145	22	38
Chlorobenzene	ND		44.9	36.9		mg/Kg		82	18 - 134	18	40
Chloroethane	ND		44.9	34.3		mg/Kg		76	14 - 159	2	40
Chloroform	ND		44.9	40.3		mg/Kg		90	43 - 134	12	36
Chloromethane	ND		44.9	27.5		mg/Kg		61	32 - 151	12	38
cis-1,2-Dichloroethene	ND		44.9	37.9		mg/Kg		84	48 - 132	15	37
cis-1,3-Dichloropropene	ND		44.9	30.6		mg/Kg		68	23 - 139	16	39
Cyclohexane	ND		44.9	35.9		mg/Kg		80	31 - 147	10	39
Chlorodibromomethane	ND		44.9	32.7		mg/Kg		73	25 - 143	20	40
Dichlorodifluoromethane	ND		44.9	27.5		mg/Kg		61	16 - 157	14	40
Ethylbenzene	ND		44.9	37.0		mg/Kg		82	17 - 137	20	40
Isopropylbenzene	ND		44.9	39.3		mg/Kg		87	10 - 146	16	40
Methyl acetate	ND		89.8	85.4		mg/Kg		95	13 - 164	11	40
Methyl tert-butyl ether	ND		44.9	37.0		mg/Kg		82	55 - 134	5	37
Methylcyclohexane	ND		44.9	33.9		mg/Kg		75	20 - 153	21	40
Methylene Chloride	ND		44.9	32.9		mg/Kg		73	38 - 145	11	40
Styrene	ND		44.9	40.3		mg/Kg		90	10 - 149	16	40
Tetrachloroethene	ND		44.9	37.0		mg/Kg		82	19 - 147	24	40
Toluene	ND		44.9	38.7		mg/Kg		86	30 - 137	16	40
trans-1,2-Dichloroethene	ND		44.9	37.7		mg/Kg		84	41 - 145	15	37
trans-1,3-Dichloropropene	ND		44.9	31.0		mg/Kg		69	19 - 130	11	40
Trichloroethene	ND		44.9	37.1		mg/Kg		83	21 - 158	18	40
Trichlorofluoromethane	ND		44.9	39.5		mg/Kg		88	36 - 161	7	40
Vinyl chloride	ND		44.9	34.8		mg/Kg		77	32 - 163	2	38
Xylenes, Total	ND		89.8	77.9		mg/Kg		87	17 - 138	19	40

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182202-22 MSD

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-SB1905-ABSORBENTS

Prep Type: Total/NA

Prep Batch: 566719

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	ND		44.9	37.3		mg/Kg		83	10 - 141	20	40
o-Xylene	ND		44.9	40.6		mg/Kg		90	18 - 139	17	40
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
Toluene-d8 (Surr)	83		56 - 125								
Dibromofluoromethane (Surr)	80		41 - 138								
4-Bromofluorobenzene (Surr)	77		41 - 143								
1,2-Dichloroethane-d4 (Surr)	81		58 - 125								

Lab Sample ID: LB 240-566129/1-A MB

Matrix: Solid

Analysis Batch: 566367

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/22/23 15:29	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/22/23 15:29	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/22/23 15:29	1
Benzene	ND		0.025	0.00042	mg/L			03/22/23 15:29	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/22/23 15:29	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/22/23 15:29	1
Chloroform	ND		0.025	0.00047	mg/L			03/22/23 15:29	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/22/23 15:29	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/22/23 15:29	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/22/23 15:29	1
Surrogate	%Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		80 - 120					03/22/23 15:29	1
Dibromofluoromethane (Surr)	93		71 - 121					03/22/23 15:29	1
4-Bromofluorobenzene (Surr)	100		80 - 120					03/22/23 15:29	1
1,2-Dichloroethane-d4 (Surr)	98		76 - 120					03/22/23 15:29	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566221/8-A

Matrix: Solid

Analysis Batch: 566449

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 566221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/21/23 12:03	03/23/23 10:08	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/21/23 12:03	03/23/23 10:08	1
Pyridine	ND		0.0040	0.00036	mg/L		03/21/23 12:03	03/23/23 10:08	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/21/23 12:03	03/23/23 10:08	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/21/23 12:03	03/23/23 10:08	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/21/23 12:03	03/23/23 10:08	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566221/8-A
Matrix: Solid
Analysis Batch: 566449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/21/23 12:03	03/23/23 10:08	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/21/23 12:03	03/23/23 10:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	121		46 - 137	03/21/23 12:03	03/23/23 10:08	1
Phenol-d5 (Surr)	65		26 - 120	03/21/23 12:03	03/23/23 10:08	1
Nitrobenzene-d5 (Surr)	81		24 - 120	03/21/23 12:03	03/23/23 10:08	1
2-Fluorophenol (Surr)	73		19 - 120	03/21/23 12:03	03/23/23 10:08	1
2-Fluorobiphenyl (Surr)	93		33 - 120	03/21/23 12:03	03/23/23 10:08	1
2,4,6-Tribromophenol (Surr)	116		10 - 120	03/21/23 12:03	03/23/23 10:08	1

Lab Sample ID: LCS 240-566221/9-A
Matrix: Solid
Analysis Batch: 566449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566221

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.0800	0.0599		mg/L		75	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0768		mg/L		96	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0796		mg/L		100	51 - 120
2,4-Dinitrotoluene	0.0800	0.0759		mg/L		95	58 - 125
Pyridine	0.160	0.0696		mg/L		44	10 - 120
2-Methylphenol	0.0800	0.0606		mg/L		76	45 - 120
Hexachlorobenzene	0.0800	0.0810		mg/L		101	55 - 120
Hexachlorobutadiene	0.0800	0.0662		mg/L		83	41 - 120
Hexachloroethane	0.0800	0.0601		mg/L		75	39 - 120
Nitrobenzene	0.0800	0.0634		mg/L		79	47 - 120
Pentachlorophenol	0.160	0.129		mg/L		81	19 - 132
3 & 4 Methylphenol	0.0800	0.0615		mg/L		77	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	112		46 - 137
Phenol-d5 (Surr)	68		26 - 120
Nitrobenzene-d5 (Surr)	84		24 - 120
2-Fluorophenol (Surr)	76		19 - 120
2-Fluorobiphenyl (Surr)	94		33 - 120
2,4,6-Tribromophenol (Surr)	123	S1+	10 - 120

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Atrazine	ND		0.20	0.036	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Carbazole	ND		0.050	0.019	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566295/1-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566295

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Isophorone	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Phenol	ND		0.050	0.0080	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/22/23 08:13	03/24/23 08:51	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/22/23 08:13	03/24/23 08:51	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	103		46 - 137	03/22/23 08:13	03/24/23 08:51	1
Phenol-d5 (Surr)	36		26 - 120	03/22/23 08:13	03/24/23 08:51	1
Nitrobenzene-d5 (Surr)	33		25 - 120	03/22/23 08:13	03/24/23 08:51	1
2-Fluorophenol (Surr)	33		20 - 120	03/22/23 08:13	03/24/23 08:51	1
2-Fluorobiphenyl (Surr)	40		34 - 120	03/22/23 08:13	03/24/23 08:51	1
2,4,6-Tribromophenol (Surr)	33		10 - 120	03/22/23 08:13	03/24/23 08:51	1

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
bis (2-chloroisopropyl) ether	0.667	0.327		mg/Kg		49	38 - 120
2,4,5-Trichlorophenol	0.667	0.502		mg/Kg		75	50 - 120
2,4,6-Trichlorophenol	0.667	0.476		mg/Kg		71	50 - 120
2,4-Dichlorophenol	0.667	0.398		mg/Kg		60	50 - 120
2,4-Dimethylphenol	0.667	0.392		mg/Kg		59	24 - 120
2,4-Dinitrophenol	1.33	1.09		mg/Kg		82	19 - 132
2,4-Dinitrotoluene	0.667	0.679		mg/Kg		102	64 - 120
2,6-Dinitrotoluene	0.667	0.603		mg/Kg		90	62 - 120
2-Chloronaphthalene	0.667	0.377		mg/Kg		57	51 - 120
2-Chlorophenol	0.667	0.373		mg/Kg		56	47 - 120
2-Methylnaphthalene	0.667	0.359		mg/Kg		54	38 - 120
2-Methylphenol	0.667	0.347		mg/Kg		52	45 - 120
2-Nitroaniline	0.667	0.523		mg/Kg		79	57 - 120
2-Nitrophenol	0.667	0.424		mg/Kg		64	51 - 120
3,3'-Dichlorobenzidine	1.33	1.46		mg/Kg		110	27 - 199
3-Nitroaniline	0.667	0.555		mg/Kg		83	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.26		mg/Kg		95	46 - 126
4-Bromophenyl phenyl ether	0.667	0.558		mg/Kg		84	65 - 120
4-Chloro-3-methylphenol	0.667	0.458		mg/Kg		69	51 - 120
4-Chloroaniline	0.667	0.350		mg/Kg		52	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.470		mg/Kg		70	59 - 120
4-Nitroaniline	0.667	0.650		mg/Kg		97	48 - 128
4-Nitrophenol	1.33	1.27		mg/Kg		96	43 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	0.667	0.394		mg/Kg		59	52 - 120
Acenaphthylene	0.667	0.391		mg/Kg		59	52 - 120
Acetophenone	0.667	0.363		mg/Kg		54	47 - 120
Anthracene	0.667	0.599		mg/Kg		90	64 - 120
Atrazine	1.33	1.35		mg/Kg		102	71 - 125
Benzaldehyde	1.33	0.648		mg/Kg		49	42 - 120
Benzo[a]anthracene	0.667	0.726		mg/Kg		109	70 - 120
Benzo[a]pyrene	0.667	0.608		mg/Kg		91	63 - 125
Benzo[b]fluoranthene	0.667	0.567		mg/Kg		85	64 - 121
Benzo[g,h,i]perylene	0.667	0.662		mg/Kg		99	62 - 120
Benzo[k]fluoranthene	0.667	0.615		mg/Kg		92	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.349		mg/Kg		52	50 - 120
Bis(2-chloroethyl)ether	0.667	0.289		mg/Kg		43	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.664		mg/Kg		100	63 - 133
Butyl benzyl phthalate	0.667	0.679		mg/Kg		102	66 - 127
Caprolactam	1.33	1.18		mg/Kg		89	67 - 120
Carbazole	0.667	0.676		mg/Kg		101	61 - 129
Chrysene	0.667	0.683		mg/Kg		102	67 - 120
Dibenz(a,h)anthracene	0.667	0.630		mg/Kg		95	62 - 120
Dibenzofuran	0.667	0.426		mg/Kg		64	55 - 120
Diethyl phthalate	0.667	0.613		mg/Kg		92	61 - 120
Dimethyl phthalate	0.667	0.571		mg/Kg		86	64 - 120
Di-n-butyl phthalate	0.667	0.650		mg/Kg		97	70 - 129
Di-n-octyl phthalate	0.667	0.609		mg/Kg		91	64 - 129
Fluoranthene	0.667	0.699		mg/Kg		105	71 - 124
Fluorene	0.667	0.470		mg/Kg		70	58 - 120
Hexachlorobenzene	0.667	0.618		mg/Kg		93	59 - 120
Hexachlorobutadiene	0.667	0.359		mg/Kg		54	45 - 120
Hexachlorocyclopentadiene	0.667	0.239	J	mg/Kg		36	10 - 120
Hexachloroethane	0.667	0.308		mg/Kg		46	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.669		mg/Kg		100	65 - 122
Isophorone	0.667	0.348		mg/Kg		52	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.352		mg/Kg		53	48 - 120
N-Nitrosodiphenylamine	0.667	0.542		mg/Kg		81	64 - 120
Naphthalene	0.667	0.338		mg/Kg		51	34 - 120
Nitrobenzene	0.667	0.355		mg/Kg		53	48 - 120
Pentachlorophenol	1.33	0.815		mg/Kg		61	10 - 120
Phenanthrene	0.667	0.566		mg/Kg		85	60 - 120
Phenol	0.667	0.349		mg/Kg		52	48 - 120
Pyrene	0.667	0.721		mg/Kg		108	67 - 120
3 & 4 Methylphenol	0.667	0.365	J	mg/Kg		55	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	124		46 - 137
Phenol-d5 (Surr)	59		26 - 120
Nitrobenzene-d5 (Surr)	55		25 - 120
2-Fluorophenol (Surr)	60		20 - 120
2-Fluorobiphenyl (Surr)	63		34 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566295/2-A
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566295

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	112		10 - 120

Lab Sample ID: 240-182202-1 MS
Matrix: Solid
Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')
Prep Type: Total/NA
Prep Batch: 566295

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
1,1'-Biphenyl	ND		0.800	ND		mg/Kg	⊛	NC	29 - 120
bis (2-chloroisopropyl) ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	10 - 120
2,4,5-Trichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	35 - 120
2,4,6-Trichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	18 - 120
2,4-Dichlorophenol	ND		0.800	ND		mg/Kg	⊛	NC	21 - 120
2,4-Dimethylphenol	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120
2,4-Dinitrophenol	ND		1.60	ND		mg/Kg	⊛	NC	10 - 126
2,4-Dinitrotoluene	ND		0.800	ND		mg/Kg	⊛	NC	46 - 120
2,6-Dinitrotoluene	ND		0.800	ND		mg/Kg	⊛	NC	44 - 120
2-Chloronaphthalene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	33 - 120
2-Chlorophenol	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	19 - 120
2-Methylnaphthalene	0.32	J	0.800	0.476	J	mg/Kg	⊛	19	13 - 122
2-Methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	12 - 120
2-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	36 - 122
2-Nitrophenol	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	28 - 120
3,3'-Dichlorobenzidine	ND		1.60	2.94	J	mg/Kg	⊛	NC	10 - 179
3-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	10 - 123
4,6-Dinitro-2-methylphenol	ND		1.60	ND		mg/Kg	⊛	NC	11 - 120
4-Bromophenyl phenyl ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	49 - 120
4-Chloro-3-methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	35 - 120
4-Chloroaniline	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120
4-Chlorophenyl phenyl ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	45 - 120
4-Nitroaniline	ND		0.800	ND		mg/Kg	⊛	NC	13 - 129
4-Nitrophenol	ND		1.60	ND		mg/Kg	⊛	NC	28 - 123
Acenaphthene	ND		0.800	0.537	J	mg/Kg	⊛	67	33 - 120
Acenaphthylene	ND		0.800	0.472	J	mg/Kg	⊛	59	39 - 120
Acetophenone	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	11 - 120
Anthracene	ND		0.800	0.522	J	mg/Kg	⊛	65	30 - 127
Atrazine	ND		1.60	ND		mg/Kg	⊛	NC	52 - 126
Benzaldehyde	ND	F1	1.60	ND	F1	mg/Kg	⊛	0	13 - 120
Benzo[a]anthracene	0.18	J	0.800	0.580	J	mg/Kg	⊛	50	24 - 137
Benzo[a]pyrene	ND		0.800	0.585	J	mg/Kg	⊛	73	28 - 136
Benzo[b]fluoranthene	0.38	J	0.800	0.649	J	mg/Kg	⊛	33	21 - 142
Benzo[g,h,i]perylene	ND		0.800	0.658	J	mg/Kg	⊛	82	10 - 144
Benzo[k]fluoranthene	ND		0.800	0.604	J	mg/Kg	⊛	75	36 - 135
Bis(2-chloroethoxy)methane	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	25 - 120
Bis(2-chloroethyl)ether	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.800	ND		mg/Kg	⊛	NC	37 - 143
Butyl benzyl phthalate	ND		0.800	1.36	J	mg/Kg	⊛	NC	49 - 130
Caprolactam	ND		1.60	ND		mg/Kg	⊛	NC	37 - 127
Carbazole	ND		0.800	ND		mg/Kg	⊛	NC	33 - 132

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MS

Matrix: Solid

Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Prep Type: Total/NA

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier					
Chrysene	0.16	J	0.800	0.586	J	mg/Kg	⊛	53	28 - 129	
Dibenz(a,h)anthracene	ND		0.800	0.631	J	mg/Kg	⊛	79	10 - 132	
Dibenzofuran	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	33 - 120	
Diethyl phthalate	ND		0.800	ND		mg/Kg	⊛	NC	48 - 120	
Dimethyl phthalate	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	45 - 120	
Di-n-butyl phthalate	ND		0.800	ND		mg/Kg	⊛	NC	40 - 137	
Di-n-octyl phthalate	ND		0.800	1.95	J	mg/Kg	⊛	NC	34 - 152	
Fluoranthene	0.21	J	0.800	0.564	J	mg/Kg	⊛	70	31 - 140	
Fluorene	ND		0.800	0.558	J	mg/Kg	⊛	70	43 - 120	
Hexachlorobenzene	ND		0.800	0.608	J	mg/Kg	⊛	76	44 - 120	
Hexachlorobutadiene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	13 - 120	
Hexachlorocyclopentadiene	ND		0.800	ND		mg/Kg	⊛	NC	10 - 120	
Hexachloroethane	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	10 - 120	
Indeno[1,2,3-cd]pyrene	ND		0.800	0.716	J	mg/Kg	⊛	89	10 - 139	
Isophorone	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	27 - 120	
N-Nitrosodi-n-propylamine	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	23 - 120	
N-Nitrosodiphenylamine	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	30 - 128	
Naphthalene	0.26	J	0.800	0.451	J	mg/Kg	⊛	24	10 - 120	
Nitrobenzene	ND	F1	0.800	ND	F1	mg/Kg	⊛	0	19 - 120	
Pentachlorophenol	ND		1.60	ND		mg/Kg	⊛	NC	10 - 120	
Phenanthrene	0.51	J F1	0.800	0.633	J F1	mg/Kg	⊛	15	36 - 120	
Phenol	ND		0.800	0.459	J	mg/Kg	⊛	57	10 - 120	
Pyrene	0.22	J	0.800	0.602	J	mg/Kg	⊛	48	31 - 134	
3 & 4 Methylphenol	ND		0.800	ND		mg/Kg	⊛	NC	10 - 122	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	88		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	53		25 - 120
2-Fluorophenol (Surr)	62		20 - 120
2-Fluorobiphenyl (Surr)	73		34 - 120
2,4,6-Tribromophenol (Surr)	52		10 - 120

Lab Sample ID: 240-182202-1 MSD

Matrix: Solid

Analysis Batch: 566576

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Prep Type: Total/NA

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier		Result	Qualifier						Limit	
1,1'-Biphenyl	ND		0.791	ND		mg/Kg	⊛	NC	29 - 120	NC	45	
bis (2-chloroisopropyl) ether	ND	F1	0.791	ND	F1	mg/Kg	⊛	0	10 - 120	NC	45	
2,4,5-Trichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	35 - 120	NC	39	
2,4,6-Trichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	18 - 120	NC	45	
2,4-Dichlorophenol	ND		0.791	ND		mg/Kg	⊛	NC	21 - 120	NC	44	
2,4-Dimethylphenol	ND		0.791	ND		mg/Kg	⊛	NC	10 - 120	NC	45	
2,4-Dinitrophenol	ND		1.58	ND		mg/Kg	⊛	NC	10 - 126	NC	45	
2,4-Dinitrotoluene	ND		0.791	ND		mg/Kg	⊛	NC	46 - 120	NC	45	
2,6-Dinitrotoluene	ND		0.791	ND		mg/Kg	⊛	NC	44 - 120	NC	45	
2-Chloronaphthalene	ND	F1	0.791	ND	F1	mg/Kg	⊛	0	33 - 120	NC	45	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MSD

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566576

Prep Batch: 566295

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
2-Chlorophenol	ND	F1	0.791	ND	F1	mg/Kg	*	0	19 - 120	NC	45
2-Methylnaphthalene	0.32	J	0.791	0.509	J	mg/Kg	*	23	13 - 122	7	45
2-Methylphenol	ND		0.791	ND		mg/Kg	*	NC	12 - 120	NC	45
2-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	36 - 122	NC	42
2-Nitrophenol	ND	F1	0.791	ND	F1	mg/Kg	*	0	28 - 120	NC	45
3,3'-Dichlorobenzidine	ND		1.58	2.78	J	mg/Kg	*	NC	10 - 179	6	45
3-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	10 - 123	NC	45
4,6-Dinitro-2-methylphenol	ND		1.58	ND		mg/Kg	*	NC	11 - 120	NC	40
4-Bromophenyl phenyl ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	49 - 120	NC	42
4-Chloro-3-methylphenol	ND		0.791	ND		mg/Kg	*	NC	35 - 120	NC	42
4-Chloroaniline	ND		0.791	ND		mg/Kg	*	NC	10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	45 - 120	NC	44
4-Nitroaniline	ND		0.791	ND		mg/Kg	*	NC	13 - 129	NC	38
4-Nitrophenol	ND		1.58	ND		mg/Kg	*	NC	28 - 123	NC	45
Acenaphthene	ND		0.791	0.524	J	mg/Kg	*	66	33 - 120	2	45
Acenaphthylene	ND		0.791	0.459	J	mg/Kg	*	58	39 - 120	3	45
Acetophenone	ND	F1	0.791	ND	F1	mg/Kg	*	0	11 - 120	NC	45
Anthracene	ND		0.791	0.546	J	mg/Kg	*	69	30 - 127	4	45
Atrazine	ND		1.58	ND		mg/Kg	*	NC	52 - 126	NC	34
Benzaldehyde	ND	F1	1.58	ND	F1	mg/Kg	*	0	13 - 120	NC	45
Benzo[a]anthracene	0.18	J	0.791	0.626	J	mg/Kg	*	56	24 - 137	8	42
Benzo[a]pyrene	ND		0.791	0.582	J	mg/Kg	*	74	28 - 136	0	41
Benzo[b]fluoranthene	0.38	J	0.791	0.669	J	mg/Kg	*	36	21 - 142	3	42
Benzo[g,h,i]perylene	ND		0.791	0.630	J	mg/Kg	*	80	10 - 144	4	40
Benzo[k]fluoranthene	ND		0.791	0.607	J	mg/Kg	*	77	36 - 135	1	44
Bis(2-chloroethoxy)methane	ND	F1	0.791	ND	F1	mg/Kg	*	0	25 - 120	NC	45
Bis(2-chloroethyl)ether	ND	F1	0.791	ND	F1	mg/Kg	*	0	16 - 120	NC	45
Bis(2-ethylhexyl) phthalate	ND		0.791	ND		mg/Kg	*	NC	37 - 143	NC	38
Butyl benzyl phthalate	ND		0.791	1.32	J	mg/Kg	*	NC	49 - 130	3	41
Caprolactam	ND		1.58	ND		mg/Kg	*	NC	37 - 127	NC	45
Carbazole	ND		0.791	ND		mg/Kg	*	NC	33 - 132	NC	45
Chrysene	0.16	J	0.791	0.648	J	mg/Kg	*	61	28 - 129	10	42
Dibenz(a,h)anthracene	ND		0.791	0.625	J	mg/Kg	*	79	10 - 132	1	37
Dibenzofuran	ND	F1	0.791	0.629	J	mg/Kg	*	80	33 - 120	NC	43
Diethyl phthalate	ND		0.791	ND		mg/Kg	*	NC	48 - 120	NC	38
Dimethyl phthalate	ND	F1	0.791	ND	F1	mg/Kg	*	0	45 - 120	NC	43
Di-n-butyl phthalate	ND		0.791	ND		mg/Kg	*	NC	40 - 137	NC	42
Di-n-octyl phthalate	ND		0.791	1.90	J	mg/Kg	*	NC	34 - 152	3	39
Fluoranthene	0.21	J	0.791	0.583	J	mg/Kg	*	74	31 - 140	3	45
Fluorene	ND		0.791	0.552	J	mg/Kg	*	70	43 - 120	1	39
Hexachlorobenzene	ND		0.791	0.591	J	mg/Kg	*	75	44 - 120	3	39
Hexachlorobutadiene	ND	F1	0.791	ND	F1	mg/Kg	*	0	13 - 120	NC	45
Hexachlorocyclopentadiene	ND		0.791	ND		mg/Kg	*	NC	10 - 120	NC	45
Hexachloroethane	ND	F1	0.791	ND	F1	mg/Kg	*	0	10 - 120	NC	45
Indeno[1,2,3-cd]pyrene	ND		0.791	0.725		mg/Kg	*	92	10 - 139	1	41
Isophorone	ND	F1	0.791	ND	F1	mg/Kg	*	0	27 - 120	NC	45
N-Nitrosodi-n-propylamine	ND	F1	0.791	ND	F1	mg/Kg	*	0	23 - 120	NC	45
N-Nitrosodiphenylamine	ND	F1	0.791	ND	F1	mg/Kg	*	0	30 - 128	NC	44
Naphthalene	0.26	J	0.791	0.454	J	mg/Kg	*	25	10 - 120	1	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182202-1 MSD

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566576

Prep Batch: 566295

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrobenzene	ND	F1	0.791	ND	F1	mg/Kg	☼	0	19 - 120	NC	45
Pentachlorophenol	ND		1.58	ND		mg/Kg	☼	NC	10 - 120	NC	45
Phenanthrene	0.51	J F1	0.791	0.748	F1	mg/Kg	☼	30	36 - 120	17	41
Phenol	ND		0.791	0.408	J	mg/Kg	☼	52	10 - 120	12	45
Pyrene	0.22	J	0.791	0.658	J	mg/Kg	☼	56	31 - 134	9	43
3 & 4 Methylphenol	ND		0.791	ND		mg/Kg	☼	NC	10 - 122	NC	45

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Terphenyl-d14 (Surr)	85		46 - 137
Phenol-d5 (Surr)	58		26 - 120
Nitrobenzene-d5 (Surr)	42		25 - 120
2-Fluorophenol (Surr)	45		20 - 120
2-Fluorobiphenyl (Surr)	63		34 - 120
2,4,6-Tribromophenol (Surr)	55		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-566222/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566344

Prep Batch: 566222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/21/23 12:08	03/22/23 13:36	1
Endrin	ND		0.00050	0.0000065	mg/L		03/21/23 12:08	03/22/23 13:36	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/21/23 12:08	03/22/23 13:36	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/21/23 12:08	03/22/23 13:36	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/21/23 12:08	03/22/23 13:36	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/21/23 12:08	03/22/23 13:36	1
Toxaphene	ND		0.020	0.000058	mg/L		03/21/23 12:08	03/22/23 13:36	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		10 - 145	03/21/23 12:08	03/22/23 13:36	1
DCB Decachlorobiphenyl	69		10 - 145	03/21/23 12:08	03/22/23 13:36	1
Tetrachloro-m-xylene	69		10 - 123	03/21/23 12:08	03/22/23 13:36	1
Tetrachloro-m-xylene	73		10 - 123	03/21/23 12:08	03/22/23 13:36	1

Lab Sample ID: LCS 240-566222/6-A

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566344

Prep Batch: 566222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endrin	0.00100	0.000894		mg/L		89	36 - 120
Heptachlor	0.00100	0.000851		mg/L		85	29 - 120
Heptachlor epoxide	0.00100	0.000846		mg/L		85	36 - 120
gamma-BHC (Lindane)	0.00100	0.000847		mg/L		85	23 - 120
Methoxychlor	0.00100	0.00105		mg/L		105	23 - 140

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-566222/6-A
Matrix: Solid
Analysis Batch: 566344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566222

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	69		10 - 145
DCB Decachlorobiphenyl	67		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	71		10 - 123

Lab Sample ID: 240-182202-11 MS
Matrix: Solid
Analysis Batch: 566344

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)
Prep Type: TCLP
Prep Batch: 566222

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Endrin	ND		0.00100	0.000958		mg/L		96	58 - 120
Heptachlor	ND		0.00100	0.000862		mg/L		86	42 - 120
Heptachlor epoxide	ND		0.00100	0.000876		mg/L		88	54 - 120
gamma-BHC (Lindane)	ND		0.00100	0.000858		mg/L		86	32 - 120
Methoxychlor	ND		0.00100	0.00124		mg/L		124	11 - 159

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	84		10 - 145
DCB Decachlorobiphenyl	75		10 - 145
Tetrachloro-m-xylene	65		10 - 123
Tetrachloro-m-xylene	67		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-566161/1-A
Matrix: Solid
Analysis Batch: 566139

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566161

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1221	ND		50	30	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1232	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1242	ND		50	19	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1248	ND		50	17	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1254	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1260	ND		50	21	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1262	ND		50	22	ug/Kg		03/21/23 08:36	03/21/23 17:31	1
Aroclor-1268	ND		50	16	ug/Kg		03/21/23 08:36	03/21/23 17:31	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	86		10 - 149	03/21/23 08:36	03/21/23 17:31	1
DCB Decachlorobiphenyl	75		10 - 174	03/21/23 08:36	03/21/23 17:31	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 240-566161/2-A
Matrix: Solid
Analysis Batch: 566139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aroclor-1016	1000	765		ug/Kg		76	28 - 140
Aroclor-1260	1000	762		ug/Kg		76	39 - 153
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Tetrachloro-m-xylene	98		10 - 149				
DCB Decachlorobiphenyl	83		10 - 174				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-356959/2-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 356959

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/23/23 21:15	03/24/23 06:19	1
2,4-D	ND		0.050	0.016	mg/L		03/23/23 21:15	03/24/23 06:19	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
2,4-Dichlorophenylacetic acid (Surr)	52		26 - 136	03/23/23 21:15	03/24/23 06:19	1			
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136	03/23/23 21:15	03/24/23 06:19	1			

Lab Sample ID: LCS 410-356959/3-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 356959

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silvex (2,4,5-TP)	0.00500	0.00355	J	mg/L		71	58 - 148
2,4-D	0.0502	0.0342	J	mg/L		68	42 - 147
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136				
2,4-Dichlorophenylacetic acid (Surr)	64		26 - 136				

Lab Sample ID: LCSD 410-356959/4-A
Matrix: Solid
Analysis Batch: 356976

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 356959

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silvex (2,4,5-TP)	0.00500	0.00365	J	mg/L		73	58 - 148	3	30
2,4-D	0.0502	0.0355	J	mg/L		71	42 - 147	4	30
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
2,4-Dichlorophenylacetic acid (Surr)	60		26 - 136						
2,4-Dichlorophenylacetic acid (Surr)	67		26 - 136						

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 240-182202-11 MS

Matrix: Solid

Analysis Batch: 356976

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Prep Type: TCLP

Prep Batch: 356959

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Silvex (2,4,5-TP)	ND		0.00500	0.00345	J	mg/L		69	58 - 148
2,4-D	ND		0.0502	0.0346	J	mg/L		69	42 - 147
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
2,4-Dichlorophenylacetic acid (Surr)	57		26 - 136						
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136						

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-358137/1-A

Matrix: Solid

Analysis Batch: 358629

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358137

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	0.258	J I	5.0	0.014	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,6,7,8-HpCDF	0.0936	J	5.0	0.0053	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8-HxCDD	0.0678	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8-HxCDF	0.0721	J	5.0	0.0098	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,4,7,8,9-HpCDF	0.0748	J	5.0	0.0073	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,6,7,8-HxCDD	0.0928	J	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,6,7,8-HxCDF	0.0470	J I	5.0	0.0093	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8-PeCDD	0.121	J I	5.0	0.0048	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8-PeCDF	0.0800	J I	5.0	0.0040	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8,9-HxCDD	0.0491	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
1,2,3,7,8,9-HxCDF	0.103	J I	5.0	0.011	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,4,6,7,8-HxCDF	0.0624	J	5.0	0.0087	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,4,7,8-PeCDF	0.0666	J	5.0	0.0029	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,7,8-TCDD	0.0322	J I	1.0	0.0056	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
2,3,7,8-TCDF	ND		1.0	0.0043	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
OCDD	0.959	J I	10	0.015	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
OCDF	0.206	J I	10	0.0041	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HxCDD	0.340	J I	5.0	0.010	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HxCDF	0.285	J I	5.0	0.0098	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HpCDD	0.258	J I	5.0	0.014	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total HpCDF	0.335	J I	5.0	0.0063	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total PeCDD	0.202	J I	5.0	0.0048	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total PeCDF	0.312	J I	5.0	0.0034	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total TCDD	0.0968	J I	1.0	0.0056	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
Total TCDF	ND		1.0	0.0043	ng/Kg		03/28/23 09:37	03/30/23 04:29	1
MB MB									
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
13C-OCDF	109		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-OCDD	113		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,7,8-TCDF	84		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,7,8-TCDD	91		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,4,7,8-PeCDF	88		40 - 135			03/28/23 09:37	03/30/23 04:29	1	
13C-2,3,4,6,7,8-HxCDF	91		40 - 135			03/28/23 09:37	03/30/23 04:29	1	

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-358137/1-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 358137

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,7,8,9-HxCDF	90		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8,9-HxCDD	97		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8-PeCDF	86		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,7,8-PeCDD	88		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,6,7,8-HxCDF	98		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,6,7,8-HxCDD	96		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8,9-HpCDF	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8-HxCDF	92		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,7,8-HxCDD	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,6,7,8-HpCDF	93		40 - 135	03/28/23 09:37	03/30/23 04:29	1
13C-1,2,3,4,6,7,8-HpCDD	100		40 - 135	03/28/23 09:37	03/30/23 04:29	1

Lab Sample ID: LCS 410-358137/2-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,2,3,4,6,7,8-HpCDD	100	101		ng/Kg		101	77 - 127
1,2,3,4,6,7,8-HpCDF	100	99.3		ng/Kg		99	77 - 127
1,2,3,4,7,8-HxCDD	100	104		ng/Kg		104	77 - 127
1,2,3,4,7,8-HxCDF	100	101		ng/Kg		101	77 - 129
1,2,3,4,7,8,9-HpCDF	100	102		ng/Kg		102	77 - 127
1,2,3,6,7,8-HxCDD	100	104		ng/Kg		104	76 - 127
1,2,3,6,7,8-HxCDF	100	101		ng/Kg		101	77 - 129
1,2,3,7,8-PeCDD	100	109		ng/Kg		109	77 - 127
1,2,3,7,8-PeCDF	100	105		ng/Kg		105	75 - 129
1,2,3,7,8,9-HxCDD	100	105		ng/Kg		105	76 - 127
1,2,3,7,8,9-HxCDF	100	102		ng/Kg		102	76 - 126
2,3,4,6,7,8-HxCDF	100	102		ng/Kg		102	78 - 128
2,3,4,7,8-PeCDF	100	103		ng/Kg		103	75 - 131
2,3,7,8-TCDD	20.0	20.3		ng/Kg		101	68 - 142
2,3,7,8-TCDF	20.0	19.8		ng/Kg		99	70 - 133
OCDD	200	207		ng/Kg		104	77 - 125
OCDF	200	203		ng/Kg		102	75 - 128

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-OCDF	129		40 - 135
13C-OCDD	133		40 - 135
13C-2,3,7,8-TCDF	88		40 - 135
13C-2,3,7,8-TCDD	93		40 - 135
13C-2,3,4,7,8-PeCDF	100		40 - 135
13C-2,3,4,6,7,8-HxCDF	93		40 - 135
13C-1,2,3,7,8,9-HxCDF	91		40 - 135
13C-1,2,3,7,8,9-HxCDD	98		40 - 135
13C-1,2,3,7,8-PeCDF	96		40 - 135
13C-1,2,3,7,8-PeCDD	98		40 - 135
13C-1,2,3,6,7,8-HxCDF	98		40 - 135
13C-1,2,3,6,7,8-HxCDD	102		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	103		40 - 135

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 410-358137/2-A
Matrix: Solid
Analysis Batch: 358629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358137

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-1,2,3,4,7,8-HxCDF	94		40 - 135
13C-1,2,3,4,7,8-HxCDD	98		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	92		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	103		40 - 135

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-566210/2-A
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566210

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 17:02	1
Barium	ND		0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 17:02	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 17:02	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 17:02	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 17:02	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 17:02	1
Silver	0.00116	J	0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 17:02	1

Lab Sample ID: LCS 240-566210/3-A
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566210

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Arsenic	2.00	2.11		mg/L		106		50 - 150
Barium	2.00	1.93		mg/L		96		50 - 150
Cadmium	1.00	0.983		mg/L		98		50 - 150
Chromium	1.00	1.02		mg/L		102		50 - 150
Lead	1.00	0.940		mg/L		94		50 - 150
Selenium	2.00	2.18		mg/L		109		50 - 150
Silver	0.100	0.107		mg/L		107		50 - 150

Lab Sample ID: LB 240-566126/1-B
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566210

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.00499	J	0.050	0.0041	mg/L		03/21/23 14:00	03/22/23 16:58	1
Barium	0.00246	J	0.50	0.0013	mg/L		03/21/23 14:00	03/22/23 16:58	1
Cadmium	ND		0.050	0.00020	mg/L		03/21/23 14:00	03/22/23 16:58	1
Chromium	ND		0.050	0.0040	mg/L		03/21/23 14:00	03/22/23 16:58	1
Lead	ND		0.050	0.0028	mg/L		03/21/23 14:00	03/22/23 16:58	1
Selenium	ND		0.050	0.0060	mg/L		03/21/23 14:00	03/22/23 16:58	1
Silver	ND		0.050	0.00062	mg/L		03/21/23 14:00	03/22/23 16:58	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-182202-18 MS
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0082	J B	5.00	5.13		mg/L		102	75 - 125
Barium	0.036	J B	50.0	46.9		mg/L		94	75 - 125
Cadmium	0.00034	J	1.00	0.952		mg/L		95	75 - 125
Chromium	ND		5.00	5.20	^+	mg/L		104	75 - 125
Lead	0.0066	J	5.00	4.82		mg/L		96	75 - 125
Selenium	ND		1.00	1.07		mg/L		107	75 - 125
Silver	ND		1.00	1.05	^+	mg/L		105	75 - 125

Lab Sample ID: 240-182202-18 MSD
Matrix: Solid
Analysis Batch: 566447

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566210

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0082	J B	5.00	5.20		mg/L		104	75 - 125	1	20
Barium	0.036	J B	50.0	47.3		mg/L		95	75 - 125	1	20
Cadmium	0.00034	J	1.00	0.955		mg/L		95	75 - 125	0	20
Chromium	ND		5.00	5.20	^+	mg/L		104	75 - 125	0	20
Lead	0.0066	J	5.00	4.85		mg/L		97	75 - 125	1	20
Selenium	ND		1.00	1.04		mg/L		104	75 - 125	2	20
Silver	ND		1.00	1.06	^+	mg/L		106	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-566212/2-A
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566212

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:22	1

Lab Sample ID: LCS 240-566212/3-A
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566212

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00429		mg/L		86	80 - 120

Lab Sample ID: LB 240-566126/1-C
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 566212

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/21/23 14:00	03/23/23 16:20	1

Lab Sample ID: 240-182202-18 MS
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566212

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.00433		mg/L		87	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 240-182202-18 MSD
Matrix: Solid
Analysis Batch: 566547

Client Sample ID: WC-SB2418-ABSORBENTS
Prep Type: TCLP
Prep Batch: 566212

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00441		mg/L		88	80 - 120	2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 240-182202-12 DU
Matrix: Solid
Analysis Batch: 566074

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	79.7		78.3		%		2	20
Percent Moisture	20.3		21.7		%		7	20

Lab Sample ID: 240-182202-1 DU
Matrix: Solid
Analysis Batch: 566207

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	84.0		85.2		%		1	20
Percent Moisture	16.0		14.8		%		8	20

Lab Sample ID: 240-182202-10 DU
Matrix: Solid
Analysis Batch: 566207

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	79.4		79.6		%		0.2	20
Percent Moisture	20.6		20.4		%		0.8	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS VOA

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	

Prep Batch: 566108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	5035	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	5035	
MB 240-566108/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-566108/2-A	Lab Control Sample	Total/NA	Solid	5035	

Prep Batch: 566125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	5035	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	5035	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	5035	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	5035	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	5035	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	5035	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	5035	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	5035	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	5035	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	5035	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	5035	
MB 240-566125/2-A	Method Blank	Total/NA	Solid	5035	
MB 240-566125/3-A	Method Blank	Total/NA	Solid	5035	

Leach Batch: 566129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084
LB 240-566129/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 566133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8260D	566125
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8260D	566125
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	8260D	566125
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	8260D	566125
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	8260D	566125
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	8260D	566125
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
MB 240-566108/1-A	Method Blank	Total/NA	Solid	8260D	566108
MB 240-566125/2-A	Method Blank	Total/NA	Solid	8260D	566125
MB 240-566133/7	Method Blank	Total/NA	Solid	8260D	
LCS 240-566108/2-A	Lab Control Sample	Total/NA	Solid	8260D	566108

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS VOA (Continued)

Analysis Batch: 566133 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-566133/6	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 566249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8260D	566125
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	8260D	566108
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	8260D	566125
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	8260D	566125
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	8260D	566125
MB 240-566125/3-A	Method Blank	Total/NA	Solid	8260D	566125
LCS 240-566249/3	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 566260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	8260D	566108

Analysis Batch: 566367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8260D	566129
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8260D	566129
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8260D	566129
LB 240-566129/1-A MB	Method Blank	TCLP	Solid	8260D	566129
LCS 240-566367/10	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 566719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	5035	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	5035	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	5035	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	5035	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	
MB 240-566719/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-566719/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-182202-22 MS	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	
240-182202-22 MSD	WC-SB1905-ABSORBENTS	Total/NA	Solid	5035	

Analysis Batch: 566725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	8260D	566719
MB 240-566719/1-A	Method Blank	Total/NA	Solid	8260D	566719
LCS 240-566719/2-A	Lab Control Sample	Total/NA	Solid	8260D	566719

Analysis Batch: 566934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22 MS	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719
240-182202-22 MSD	WC-SB1905-ABSORBENTS	Total/NA	Solid	8260D	566719

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS Semi VOA

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	

Leach Batch: 566127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084

Prep Batch: 566221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	3510C	566127
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	3510C	566127
MB 240-566221/8-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566221/9-A	Lab Control Sample	Total/NA	Solid	3510C	

Prep Batch: 566295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	3540C	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	3540C	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	3540C	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	3540C	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	3540C	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	3540C	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	3540C	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	3540C	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	3540C	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	3540C	
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	3540C	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	3540C	
MB 240-566295/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-566295/2-A	Lab Control Sample	Total/NA	Solid	3540C	
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	3540C	

Analysis Batch: 566449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8270E	566221
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8270E	566221
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8270E	566221
MB 240-566221/8-A	Method Blank	Total/NA	Solid	8270E	566221
LCS 240-566221/9-A	Lab Control Sample	Total/NA	Solid	8270E	566221

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC/MS Semi VOA

Analysis Batch: 566576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	8270E	566295
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	8270E	566295
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	8270E	566295
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	8270E	566295
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	8270E	566295
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	8270E	566295
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	8270E	566295
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	8270E	566295
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	8270E	566295
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	8270E	566295
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	8270E	566295
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	8270E	566295
MB 240-566295/1-A	Method Blank	Total/NA	Solid	8270E	566295
LCS 240-566295/2-A	Lab Control Sample	Total/NA	Solid	8270E	566295
240-182202-1 MS	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295
240-182202-1 MSD	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	8270E	566295

GC Semi VOA

Leach Batch: 356514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	

Prep Batch: 356959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356514
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8151A	356514
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8151A	356514
MB 410-356959/2-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-356959/3-A	Lab Control Sample	Total/NA	Solid	8151A	
LCSD 410-356959/4-A	Lab Control Sample Dup	Total/NA	Solid	8151A	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356514

Analysis Batch: 356976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356959
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8151A	356959
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8151A	356959
MB 410-356959/2-A	Method Blank	Total/NA	Solid	8151A	356959
LCS 410-356959/3-A	Lab Control Sample	Total/NA	Solid	8151A	356959
LCSD 410-356959/4-A	Lab Control Sample Dup	Total/NA	Solid	8151A	356959

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC Semi VOA (Continued)

Analysis Batch: 356976 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8151A	356959

Composite Batch: 566080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Composite	

Composite Batch: 566084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	Composite	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	Composite	

Leach Batch: 566127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	1311	566084
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	1311	566084
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	1311	566084

Analysis Batch: 566139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	8082A	566161
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	8082A	566161
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	8082A	566161
MB 240-566161/1-A	Method Blank	Total/NA	Solid	8082A	566161
LCS 240-566161/2-A	Lab Control Sample	Total/NA	Solid	8082A	566161

Prep Batch: 566161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	3546	566080
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	3546	566080
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	3546	566080
MB 240-566161/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-566161/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 566222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	3510C	566127
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	3510C	566127
MB 240-566222/5-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-566222/6-A	Lab Control Sample	Total/NA	Solid	3510C	
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	3510C	566127

Analysis Batch: 566344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8081B	566222
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	TCLP	Solid	8081B	566222

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

GC Semi VOA (Continued)

Analysis Batch: 566344 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-17	WC-COMP-SOIL + DEBRIS	TCLP	Solid	8081B	566222
MB 240-566222/5-A	Method Blank	Total/NA	Solid	8081B	566222
LCS 240-566222/6-A	Lab Control Sample	Total/NA	Solid	8081B	566222
240-182202-11 MS	WC-S. TRACK-DEEP-COMP (01-05)	TCLP	Solid	8081B	566222

Specialty Organics

Prep Batch: 358137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	HRMS-Soxtherm	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	HRMS-Soxtherm	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	HRMS-Soxtherm	
MB 410-358137/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-358137/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 358629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	8290A	358137
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	8290A	358137
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	8290A	358137
MB 410-358137/1-A	Method Blank	Total/NA	Solid	8290A	358137
LCS 410-358137/2-A	Lab Control Sample	Total/NA	Solid	8290A	358137

Metals

Leach Batch: 566126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	1311	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	1311	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	1311	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	1311	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	1311	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	1311	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	1311	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	1311	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	1311	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	1311	
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	1311	
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	1311	
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	1311	
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	1311	
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	1311	
LB 240-566126/1-B	Method Blank	TCLP	Solid	1311	
LB 240-566126/1-C	Method Blank	TCLP	Solid	1311	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Metals

Prep Batch: 566210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	3010A	566126
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	3010A	566126
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	3010A	566126
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	3010A	566126
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	3010A	566126
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	3010A	566126
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	3010A	566126
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	3010A	566126
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	3010A	566126
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	3010A	566126
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	3010A	566126
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	3010A	566126
LB 240-566126/1-B	Method Blank	TCLP	Solid	3010A	566126
MB 240-566210/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-566210/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	3010A	566126

Prep Batch: 566212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	7470A	566126
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	7470A	566126
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	7470A	566126
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	7470A	566126
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	7470A	566126
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	7470A	566126
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	7470A	566126
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	7470A	566126
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	7470A	566126
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	7470A	566126
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	7470A	566126
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	7470A	566126
LB 240-566126/1-C	Method Blank	TCLP	Solid	7470A	566126
MB 240-566212/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-566212/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566126

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Metals

Analysis Batch: 566447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	6010D	566210
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	6010D	566210
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	6010D	566210
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	6010D	566210
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	6010D	566210
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	6010D	566210
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	6010D	566210
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	6010D	566210
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	6010D	566210
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	6010D	566210
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	6010D	566210
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	6010D	566210
LB 240-566126/1-B	Method Blank	TCLP	Solid	6010D	566210
MB 240-566210/2-A	Method Blank	Total/NA	Solid	6010D	566210
LCS 240-566210/3-A	Lab Control Sample	Total/NA	Solid	6010D	566210
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	6010D	566210

Analysis Batch: 566547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	TCLP	Solid	7470A	566212
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	TCLP	Solid	7470A	566212
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	TCLP	Solid	7470A	566212
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	TCLP	Solid	7470A	566212
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	TCLP	Solid	7470A	566212
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	TCLP	Solid	7470A	566212
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	TCLP	Solid	7470A	566212
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	TCLP	Solid	7470A	566212
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	TCLP	Solid	7470A	566212
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	TCLP	Solid	7470A	566212
240-182202-13	WC-SB1188-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-14	WC-AMU112-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-15	WC-SB2655-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-16	WC-SB2455-SOIL + DEBRIS	TCLP	Solid	7470A	566212
240-182202-18	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-19	WC-SB1833-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-20	WC-SB2446-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-21	WC-SB1450-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-22	WC-SB1905-ABSORBENTS	TCLP	Solid	7470A	566212
LB 240-566126/1-C	Method Blank	TCLP	Solid	7470A	566212
MB 240-566212/2-A	Method Blank	Total/NA	Solid	7470A	566212
LCS 240-566212/3-A	Lab Control Sample	Total/NA	Solid	7470A	566212
240-182202-18 MS	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212
240-182202-18 MSD	WC-SB2418-ABSORBENTS	TCLP	Solid	7470A	566212

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

General Chemistry

Analysis Batch: 566074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Moisture	566080
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Moisture	566080
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Moisture	566080
240-182202-12 DU	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Moisture	566080

Composite Batch: 566080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-11	WC-S. TRACK-DEEP-COMP (01-05)	Total/NA	Solid	Composite	
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	
240-182202-17	WC-COMP-SOIL + DEBRIS	Total/NA	Solid	Composite	
240-182202-12 DU	WC-S. TRACK-DEEP-COMP (06-10)	Total/NA	Solid	Composite	

Analysis Batch: 566207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-1	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	Moisture	
240-182202-2	WC-S. TRACK-DEEP-02 (6-8')	Total/NA	Solid	Moisture	
240-182202-3	WC-S. TRACK-DEEP-03 (8-10')	Total/NA	Solid	Moisture	
240-182202-4	WC-S. TRACK-DEEP-04 (6-8')	Total/NA	Solid	Moisture	
240-182202-5	WC-S. TRACK-DEEP-05 (4-6')	Total/NA	Solid	Moisture	
240-182202-6	WC-S. TRACK-DEEP-06 (4-6')	Total/NA	Solid	Moisture	
240-182202-7	WC-S. TRACK-DEEP-07 (4-6')	Total/NA	Solid	Moisture	
240-182202-8	WC-S. TRACK-DEEP-08 (2-4')	Total/NA	Solid	Moisture	
240-182202-9	WC-S. TRACK-DEEP-09 (2-4')	Total/NA	Solid	Moisture	
240-182202-10	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	Moisture	
240-182202-13	WC-SB1188-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-14	WC-AMU112-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-15	WC-SB2655-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-16	WC-SB2455-SOIL + DEBRIS	Total/NA	Solid	Moisture	
240-182202-1 DU	WC-S. TRACK-DEEP-01 (8-10')	Total/NA	Solid	Moisture	
240-182202-10 DU	WC-S. TRACK-DEEP-10 (4-6')	Total/NA	Solid	Moisture	

Organic Prep

Analysis Batch: 566094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182202-18	WC-SB2418-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-19	WC-SB1833-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-20	WC-SB2446-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-21	WC-SB1450-ABSORBENTS	Total/NA	Solid	Part Size Red	
240-182202-22	WC-SB1905-ABSORBENTS	Total/NA	Solid	Part Size Red	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:41
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:34
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-01 (8-10')

Lab Sample ID: 240-182202-1

Date Collected: 03/18/23 09:01

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 10:48
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		40	566576	MRU	EET CAN	03/24/23 11:10

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:45
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:36
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-02 (6-8')

Lab Sample ID: 240-182202-2

Date Collected: 03/18/23 09:10

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:06
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 14:23
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		10	566576	MRU	EET CAN	03/24/23 13:04

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:50
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:38
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-03 (8-10')

Lab Sample ID: 240-182202-3

Date Collected: 03/18/23 09:39

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566108	LAM	EET CAN	03/20/23 14:08
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 23:37
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		20	566576	MRU	EET CAN	03/24/23 12:41

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:55
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:41
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-04 (6-8')

Lab Sample ID: 240-182202-4

Date Collected: 03/18/23 09:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566108	LAM	EET CAN	03/20/23 14:08
Total/NA	Analysis	8260D		10	566260	TJL2	EET CAN	03/22/23 05:06
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		50	566576	MRU	EET CAN	03/24/23 12:19

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:59
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:48
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-05 (4-6')

Lab Sample ID: 240-182202-5

Date Collected: 03/18/23 11:08

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:31
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		4	566576	MRU	EET CAN	03/24/23 13:27

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:04
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:50
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-06 (4-6')

Lab Sample ID: 240-182202-6

Date Collected: 03/18/23 11:15

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 11:09
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 14:13

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:08
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:52
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-07 (4-6')

Lab Sample ID: 240-182202-7

Date Collected: 03/18/23 11:33

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 11:30
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 16:07

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:21
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:54
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-08 (2-4')

Lab Sample ID: 240-182202-8

Date Collected: 03/18/23 11:40

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 21:57
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 14:35

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:25
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:56
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-09 (2-4')

Lab Sample ID: 240-182202-9

Date Collected: 03/18/23 11:51

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 12:13
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 13:50

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:30
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 16:58
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-S. TRACK-DEEP-10 (4-6')

Lab Sample ID: 240-182202-10

Date Collected: 03/18/23 12:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 14:00
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 16:30

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 16:16
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 15:15
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:07
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 08:39
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Client Sample ID: WC-S. TRACK-DEEP-COMP (01-05)

Lab Sample ID: 240-182202-11

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 80.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 16:42
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/29/23 22:49

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 16:39
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 15:38
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:39

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 09:07
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Client Sample ID: WC-S. TRACK-DEEP-COMP (06-10)

Lab Sample ID: 240-182202-12

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 79.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 16:59
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/29/23 23:38

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:35
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:00
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB1188-SOIL + DEBRIS

Lab Sample ID: 240-182202-13

Date Collected: 03/18/23 13:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 60.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566249	CS	EET CAN	03/21/23 22:22
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 18:24

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:39
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:02
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-AMU112-SOIL + DEBRIS

Lab Sample ID: 240-182202-14

Date Collected: 03/18/23 14:05

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 12:56
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 16:52

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:44
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:04
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB2655-SOIL + DEBRIS

Lab Sample ID: 240-182202-15

Date Collected: 03/18/23 14:35

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 13:17
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		2	566576	MRU	EET CAN	03/24/23 17:15

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:48
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:06
Total/NA	Analysis	Moisture		1	566207	MS	EET CAN	03/21/23 11:05

Client Sample ID: WC-SB2455-SOIL + DEBRIS

Lab Sample ID: 240-182202-16

Date Collected: 03/18/23 14:20

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566125	LAM	EET CAN	03/19/23 13:00
Total/NA	Analysis	8260D		1	566133	TJL2	EET CAN	03/21/23 13:38
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 18:47

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566129	DRJ	EET CAN	03/20/23 17:20 - 03/21/23 09:25 ¹
TCLP	Analysis	8260D		1	566367	AJS	EET CAN	03/22/23 17:02
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566221	SDE	EET CAN	03/21/23 12:03
TCLP	Analysis	8270E		1	566449	MRU	EET CAN	03/23/23 16:00
TCLP	Composite	Composite			566084	DRJ	EET CAN	03/20/23 11:54
TCLP	Leach	1311			566127	DRJ	EET CAN	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	3510C			566222	SDE	EET CAN	03/21/23 12:08
TCLP	Analysis	8081B		1	566344	BPM	EET CAN	03/22/23 14:54
TCLP	Leach	1311			356514	UNWS	ELLE	03/20/23 16:45 - 03/21/23 08:50 ¹
TCLP	Prep	8151A			356959	K2IL	ELLE	03/23/23 21:15
TCLP	Analysis	8151A		1	356976	UAMZ	ELLE	03/24/23 09:35
Total/NA	Analysis	Moisture		1	566074	GH	EET CAN	03/20/23 11:50
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-COMP-SOIL + DEBRIS

Lab Sample ID: 240-182202-17

Date Collected: 03/18/23 00:00

Matrix: Solid

Date Received: 03/18/23 18:42

Percent Solids: 61.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566080	DRJ	EET CAN	03/20/23 11:54
Total/NA	Prep	3546			566161	BMB	EET CAN	03/21/23 08:36
Total/NA	Analysis	8082A		1	566139	LSH	EET CAN	03/21/23 17:15
Total/NA	Prep	HRMS-Soxtherm			358137	UJSZ	ELLE	03/28/23 09:37
Total/NA	Analysis	8290A		1	358629	DZ6A	ELLE	03/30/23 00:26

Client Sample ID: WC-SB2418-ABSORBENTS

Lab Sample ID: 240-182202-18

Date Collected: 03/18/23 14:45

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 12:44
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 15:21
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 17:11
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 18:05
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1833-ABSORBENTS

Lab Sample ID: 240-182202-19

Date Collected: 03/18/23 15:00

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 13:06
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 14:58
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:53
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:13
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Client Sample ID: WC-SB2446-ABSORBENTS

Lab Sample ID: 240-182202-20

Date Collected: 03/18/23 15:10

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		1	566725	TJL2	EET CAN	03/25/23 13:27
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		1	566576	MRU	EET CAN	03/24/23 15:44
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 18:58
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:15
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1450-ABSORBENTS

Lab Sample ID: 240-182202-21

Date Collected: 03/18/23 15:25

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		20	566934	TJL2	EET CAN	03/28/23 08:39
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		5	566576	MRU	EET CAN	03/24/23 17:38
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 19:02
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:17
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 11:00

Client Sample ID: WC-SB1905-ABSORBENTS

Lab Sample ID: 240-182202-22

Date Collected: 03/18/23 15:35

Matrix: Solid

Date Received: 03/18/23 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566719	LAM	EET CAN	03/24/23 22:04
Total/NA	Analysis	8260D		4	566934	TJL2	EET CAN	03/28/23 09:00
Total/NA	Prep	3540C			566295	AJ	EET CAN	03/22/23 08:13
Total/NA	Analysis	8270E		4	566576	MRU	EET CAN	03/24/23 18:01
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	3010A			566210	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	6010D		1	566447	KLC	EET CAN	03/22/23 19:15
TCLP	Leach	1311			566126	DRJ	EET CAN	03/20/23 17:40 - 03/21/23 09:45 ¹
TCLP	Prep	7470A			566212	AJC	EET CAN	03/21/23 14:00
TCLP	Analysis	7470A		1	566547	MRL	EET CAN	03/23/23 17:19
Total/NA	Analysis	Part Size Red		1	566094	DRJ	EET CAN	03/20/23 12:54

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182202-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

Chain of Custody Record

644942



Environment Testing America

TAL-9210

Address:

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: <u>Wen Artyup</u>		Site Contact:		Date: <u>3/15/23</u>		COC No. <u>2</u> of <u>2</u> COCs	
Company Name: <u>Arcadis</u>		Tel/Email: <u>NSO.Artyup@arcadis.com</u>		Lab Contact:		Carrier:		Sampler:	
Address: <u>111-D Sanders Lane</u>		Analysis Turnaround Time		Perform MS / MSD (Y / N)		Filtered Sample (Y / N)		For Lab Use Only:	
City/State/Zip: <u>Blanchard VA 24605</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Sample Date		Sample Type (C-Comp, G-Grab)		Walk-in Client:	
Phone: <u>304-396-9424</u>		TAT if different from Below		Sample Time		Matrix		Lab Sampling:	
Fax:		<input type="checkbox"/> 2 weeks <u>RUSH</u>		Sample Date		# of Cont.		Job / SDG No.:	
Project Name: <u>NS E. Pulshine OH Dredgment</u>		<input type="checkbox"/> 1 week		Sample Date		Matrix		Sample Specific Notes:	
Site: <u>E. Pulshine OH</u>		<input type="checkbox"/> 2 days		Sample Date		Matrix			
P.O.#		<input type="checkbox"/> 1 day		Sample Date		Matrix			
WC-S.Track-deep-01 (8-10')	3/15/23	9:01	G	S	9				
WC-S.Track-deep-02 (6-8')	3/15/23	9:10	G	S	9				
WC-S.Track-deep-03 (8-10')	3/15/23	9:39	G	S	9				
WC-S.Track-deep-04 (6-8')	3/15/23	9:40	G	S	9				
WC-S.Track-deep-05 (4-6')	3/14/23	11:08	G	S	9				
WC-S.Track-deep-06 (4-6')	3/18/23	11:15	G	S	9				
WC-S.Track-deep-07 (4-6')	3/19/23	11:33	G	S	9				
WC-S.Track-deep-08 (2-4')	3/19/23	11:40	G	S	9				
WC-S.Track-deep-09 (2-4')	3/19/23	11:51	G	S	9				
WC-S.Track-deep-10 (4-6')	3/19/23	12:00	G	S	9				
WC-S.Track-deep-COMP01-05	3/15/23	-	C	S	-				
WC-S.Track-deep-COMP (06-10)	3/15/23	-	C	S	-				

240-182202 Chain of Custody

LAB TO GENERATE 5-pt COMPOSITE

LAB TO GENERATE 5-pt COMPOSITE

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months



Chain of Custody Record

644941



Environment Testing
America

Address:

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager: JASON ARTRIP		Site Contact:		Date: 3-13-23		COC No: 1 of 1	
Company Name: Arcadis		Tel/Email: Jason.Artrip@arcadis.com		Lab Contact:		Carrier:		COCs	
Address: 111-D Sanders Lane		Analysis Turnaround Time		Performs MS/MSD (Y/N)		Total VOC		For Lab Use Only:	
City/State/Zip: Bluefield VA 24605		CALENDAR DAYS WORKING DAYS		Filtered Sample (Y/N)		Total PCBs		Walk-in Client:	
Phone: 304-3916-9424		TAT if different from Below RUSH		Matrix		Total Metals		Lab Sampling:	
Fax:		2 weeks		Sample Type (C=Comp, G=Grab)		Total SVOC		Job / SDG No.:	
Project Name: N/S East Palestine OH decont		1 week		Sample Date		Total SVOC			
Site: East Palestine OH		2 days		Sample Time		Total PCBs			
PO # 24030745		1 day		# of Cont.		Total SVOC			
Sample Identification		Sample Date		Sample Time		Matrix		Sample Specific Notes:	
WC-SB1188 - Soil + Debris	3/10/23	1335	G	S	9	N	X	X	
WC-APMU117 - Soil + Debris	3/10/23	1405	G	S	9	N	X	X	
WC-SB2655 - Soil + Debris	3/10/23	1435	G	S	9	N	X	X	
WC-SB2455 - Soil + Debris	3/10/23	1420	G	S	9	N	X	X	
WC-Comp - Soil + Debris	3/18/23	-	C	S	X	N	X	X	
WC-SB2418 - Absorbents	3/10/23	1445	G	W	2	N	X	X	
WC-SB1833 - Absorbents	3/10/23	1500	G	W	2	N	X	X	
WC-SB2446 - Absorbents	3/10/23	1510	G	W	2	N	X	X	
WC-SB1450 - Absorbents	3/10/23	1525	G	W	2	N	X	X	
WC-SB1405 - Absorbents	3/10/23	1535	G	W	2	N	X	X	
<p>Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other</p> <p>Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. 14043</p> <p><input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown</p> <p>Special Instructions/QC Requirements & Comments:</p>									
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months</p>									
Relinquished by:		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Therm ID No.:			
Michelle Clayton		Arcadis		3/10/23 1700		318.23		17:22	
Relinquished by:		Company:		Date/Time:		Company:		Date/Time:	
Jason Umbarger		EETNC		3/18/23 1842		EETNC		3-18-23 1842	
Relinquished by:		Company:		Date/Time:		Company:		Date/Time:	
Jason Umbarger		EETNC		3/18/23 1842		EETNC		3-18-23 1842	



Eurofins - Canton Sample Receipt Form/Narrative Login # : _____
Barberton Facility

Client Arcaadis Site Name NSRR-ER Cooler unpacked by: Jane
Cooler Received on 3-18-23 Opened on 3-20-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box Client Cooler Box _____ Other _____
Packing material used: Bubble Wrap Foam Plastic Bag ~~None~~ Other the
COOLANT: Wet Ice Blue Ice Dry Ice Water None 3-20-23

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity lea Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No NA
15. Were air bubbles >6 mm in any VOA vials? Yes No NA  ← Larger than this.
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No NA
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-182202-1

Login Number: 182202

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 03/21/23 10:52 AM

Creator: Ballard, Megan

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182202-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	100	104	72	77	75	74	75	78
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	91	95	66	72	73	71	69	73
240-182202-17	WC-COMP-SOIL + DEBRIS	66	70	48	54	53	50	49	55
LCS 410-358137/2-A	Lab Control Sample	129	133	88	93	100	93	91	98
MB 410-358137/1-A	Method Blank	109	113	84	91	88	91	90	97

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-182202-11	WC-S. TRACK-DEEP-COMP (0	73	72	78	78	81	75	75	75
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	72	72	72	75	75	70	71	71
240-182202-17	WC-COMP-SOIL + DEBRIS	53	54	54	57	54	53	55	52
LCS 410-358137/2-A	Lab Control Sample	96	98	98	102	103	94	98	92
MB 410-358137/1-A	Method Blank	86	88	98	96	93	92	93	93

Lab Sample ID	Client Sample ID	HpCDD (40-135)
		240-182202-11
240-182202-12	WC-S. TRACK-DEEP-COMP (06-10)	78
240-182202-17	WC-COMP-SOIL + DEBRIS	60
LCS 410-358137/2-A	Lab Control Sample	103
MB 410-358137/1-A	Method Blank	100

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 4/5/2023 4:23:30 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182548-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
4/5/2023 4:23:30 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	18
Surrogate Summary	64
QC Sample Results	68
QC Association Summary	94
Lab Chronicle	101
Certification Summary	108
Chain of Custody	110
Receipt Checklists	118
Isotope Dilution Summary	119

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Job ID: 240-182548-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182548-1

Comments

No additional comments.

Receipt

The samples were received on 3/25/2023 6:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.3° C, 2.2° C and 2.7° C.

GC/MS VOA

Method 5035: The following sample(s) were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. WC-S. TRACK-SP2-01 (2-3') (240-182548-1), WC-S. TRACK-SP2-02 (2-3') (240-182548-2), WC-S. TRACK-SP2-03 (4-5') (240-182548-3), WC-S. TRACK-SP2-04 (4-5') (240-182548-4), WC-S. TRACK-SP2-05 (6-7') (240-182548-5), WC-S. TRACK-SP2-06 (2-3') (240-182548-6), WC-S. TRACK-SP2-07 (3-4') (240-182548-7), WC-S. TRACK-SP2-08 (7-8') (240-182548-8), WC-S. TRACK-SP2-09 (9-10') (240-182548-9), WC-S. TRACK-SP2-10 (5-6') (240-182548-10), (240-182548-A-10 MS) and (240-182548-A-10 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-566934 recovered above the upper control limit for: Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-567081 recovered above the upper control limit for 1,1,2,2-Tetrachloroethane, Bromomethane, Chloroethane, Dichlorodifluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-567049 and 240-566928 and analytical batch 240-567081 recovered outside control limits for the following analyte: Acetone. Acetone has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method 8260D: The method blank for preparation batch 240-567049 and 240-566928 and analytical batch 240-567081 contained Acetone above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated samples were not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260D: Surrogate recovery for the following sample was outside of acceptance limits: WC-S. TRACK-SP2-01 (2-3') (240-182548-1). There was insufficient sample to perform a re-extraction; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-567084 was outside the method criteria for the following analytes: 1,2-Dibromo-3-Chloropropane and Dichloro-difluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes are considered estimated.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-567049 and analytical batch 240-567084.

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-567049 and analytical batch 240-567084 recovered outside control limits for the following analyte: Acetone. These analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The following sample was preserved via freezing on 3-26-23 at 12:51: WC-S. TRACK-SP2-01 (2-3') (240-182548-1), WC-S. TRACK-SP2-02 (2-3') (240-182548-2) and WC-S. TRACK-SP2-05 (6-7') (240-182548-5). This is outside the 48 hour time frame required by the method.

Method 8260D: The method blank for 240-567049 contained Acetone above the reporting limit (RL). This compound is considered a

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Job ID: 240-182548-1 (Continued)

Laboratory: Eurofins Canton (Continued)

common laboratory contaminant. The associated sample was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260D: A MS/MSD was prepared for batch 240-566928, but was analyzed in a different analytical batch: WC-S. TRACK-SP2-03 (4-5') (240-182548-3) and WC-S. TRACK-SP2-09 (9-10') (240-182548-9).

Method 8260D: This sample had a reanalysis that had different results than the original analysis. This is most likely due to non-homogeneity in the sample. Both runs are reported: WC-S. TRACK-SP2-09 (9-10') (240-182548-9)

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-567279 was outside the method criteria for the following analytes: 1,2-Dibromo-3-Chloropropane; 1,2-Dichloropropane; Chloromethane; Methyl tert-butyl ether; and trans-1,3-Dichloropropene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-S. TRACK-SP2-01 (2-3') (240-182548-1), WC-S. TRACK-SP2-02 (2-3') (240-182548-2), WC-S. TRACK-SP2-03 (4-5') (240-182548-3), WC-S. TRACK-SP2-04 (4-5') (240-182548-4), WC-S. TRACK-SP2-05 (6-7') (240-182548-5), WC-S. TRACK-SP2-06 (2-3') (240-182548-6), WC-S. TRACK-SP2-07 (3-4') (240-182548-7), WC-S. TRACK-SP2-08 (7-8') (240-182548-8), WC-S. TRACK-SP2-09 (9-10') (240-182548-9), WC-S. TRACK-SP2-10 (5-6') (240-182548-10), (240-182548-G-10-C MS) and (240-182548-G-10-D MSD). Elevated reporting limits (RLs) are provided.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-567268 recovered above the upper control limit for 2-Nitrophenol. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The following samples are impacted: WC-S. TRACK-SP2-01 (2-3') (240-182548-1), WC-S. TRACK-SP2-02 (2-3') (240-182548-2), WC-S. TRACK-SP2-03 (4-5') (240-182548-3), WC-S. TRACK-SP2-04 (4-5') (240-182548-4), WC-S. TRACK-SP2-05 (6-7') (240-182548-5), WC-S. TRACK-SP2-06 (2-3') (240-182548-6), WC-S. TRACK-SP2-07 (3-4') (240-182548-7), WC-S. TRACK-SP2-08 (7-8') (240-182548-8), WC-S. TRACK-SP2-09 (9-10') (240-182548-9) and WC-S. TRACK-SP2-10 (5-6') (240-182548-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: WC-S. TRACK-SP2-COMP01-05 (240-182548-11) and WC-S. TRACK-SP2-COMP06-10 (240-182548-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin

Method 8290A: Any peak area that is the result of interferences from poly-chlorinated diphenyl ethers observed in the sample has been removed from the calculated results prior to reporting the data for totals.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Job ID: 240-182548-1 (Continued)

Laboratory: Eurofins Canton (Continued)

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Method Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8081B	Organochlorine Pesticides (GC)	SW846	EET CAN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CAN
8151A	Herbicides (GC)	SW846	ELLE
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	ELLE
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
1311	TCLP Extraction	SW846	ELLE
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
3546	Microwave Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
8151A	Extraction (Herbicides)	SW846	ELLE
Composite	Sample Compositing	None	EET CAN
HRMS-Soxtherm	Soxtherm Extraction	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

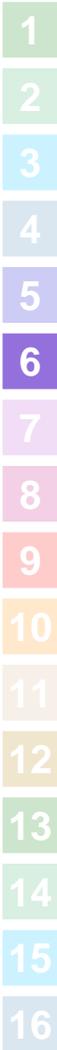
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Solid	03/24/23 11:00	03/25/23 18:35
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Solid	03/24/23 11:11	03/25/23 18:35
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Solid	03/24/23 11:22	03/25/23 18:35
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Solid	03/24/23 11:38	03/25/23 18:35
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Solid	03/24/23 11:50	03/25/23 18:35
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Solid	03/24/23 12:05	03/25/23 18:35
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Solid	03/24/23 12:13	03/25/23 18:35
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Solid	03/24/23 13:00	03/25/23 18:35
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Solid	03/24/23 13:25	03/25/23 18:35
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Solid	03/24/23 13:40	03/25/23 18:35
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Solid	03/24/23 00:00	03/25/23 18:35
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Solid	03/24/23 00:00	03/25/23 18:35



Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0081	J H	0.016	0.0029	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.054	H *+ B	0.021	0.017	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.0040	J H	0.0041	0.00057	mg/Kg	1	✳	8260D	Total/NA
Carbon disulfide	0.00096	J H	0.0041	0.00096	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.024	J	0.034	0.0045	mg/Kg	2	✳	8270E	Total/NA
Benzo[a]anthracene	0.013	J	0.034	0.0078	mg/Kg	2	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.027	J	0.034	0.015	mg/Kg	2	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.026	J	0.034	0.016	mg/Kg	2	✳	8270E	Total/NA
Chrysene	0.017	J	0.034	0.0034	mg/Kg	2	✳	8270E	Total/NA
Fluoranthene	0.022	J	0.034	0.010	mg/Kg	2	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.019	J	0.034	0.017	mg/Kg	2	✳	8270E	Total/NA
Naphthalene	0.013	J	0.034	0.0055	mg/Kg	2	✳	8270E	Total/NA
Phenanthrene	0.040		0.034	0.0051	mg/Kg	2	✳	8270E	Total/NA
Pyrene	0.029	J	0.034	0.0049	mg/Kg	2	✳	8270E	Total/NA
2-Butoxyethanol	1.2		0.16	0.15	mg/Kg	2	✳	8270E	Total/NA
Arsenic	0.0085	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.16	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0037	J H	0.019	0.0034	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.022	J H B *+	0.024	0.020	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	0.074	H	0.048	0.019	mg/Kg	1	✳	8260D	Total/NA
Methyl acrylate	0.0053	J H	0.0096	0.0030	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.79	J	0.90	0.12	mg/Kg	50	✳	8270E	Total/NA
Benzo[a]anthracene	0.39	J	0.90	0.20	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.66	J	0.90	0.39	mg/Kg	50	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.41	J	0.90	0.41	mg/Kg	50	✳	8270E	Total/NA
Chrysene	0.53	J	0.90	0.089	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	0.75	J	0.90	0.27	mg/Kg	50	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.51	J	0.90	0.44	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	0.55	J	0.90	0.14	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	0.95		0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
Pyrene	0.67	J	0.90	0.13	mg/Kg	50	✳	8270E	Total/NA
2-Butoxyethanol	59		4.2	3.9	mg/Kg	50	✳	8270E	Total/NA
Arsenic	0.013	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.18	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0034	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.86	J	1.5	0.37	mg/Kg	1	✳	8260D	Total/NA
Benzene	0.17	J	0.38	0.064	mg/Kg	1	✳	8260D	Total/NA
Cyclohexane	2.2		0.76	0.25	mg/Kg	1	✳	8260D	Total/NA
Ethylbenzene	0.18	J	0.38	0.071	mg/Kg	1	✳	8260D	Total/NA
Isopropylbenzene	0.063	J	0.38	0.058	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.43	J	1.9	0.26	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	7.4		0.76	0.10	mg/Kg	1	✳	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5') (Continued)

Lab Sample ID: 240-182548-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.79		0.38	0.36	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.38		0.38	0.19	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	2.6		0.76	0.14	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	2300		380	210	mg/Kg	100	✳	8260D	Total/NA
Methyl acrylate	2.7		0.76	0.18	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.21	J	0.25	0.084	mg/Kg	4	✳	8270E	Total/NA
2-Methylnaphthalene	1.1		0.074	0.0097	mg/Kg	4	✳	8270E	Total/NA
Acenaphthene	0.12		0.074	0.014	mg/Kg	4	✳	8270E	Total/NA
Acenaphthylene	0.036	J	0.074	0.020	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.096		0.074	0.012	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.28		0.074	0.017	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.20		0.074	0.046	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.28		0.074	0.032	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.19		0.074	0.035	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.10		0.074	0.034	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.45		0.074	0.0074	mg/Kg	4	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.065	J	0.074	0.034	mg/Kg	4	✳	8270E	Total/NA
Dibenzofuran	0.80		0.25	0.064	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.65		0.074	0.022	mg/Kg	4	✳	8270E	Total/NA
Fluorene	0.12		0.074	0.014	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.13		0.074	0.036	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.79		0.074	0.012	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	1.7		0.074	0.011	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.57		0.074	0.011	mg/Kg	4	✳	8270E	Total/NA
2-Butoxyethanol	6.4		0.35	0.32	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.0094	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.30	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0018	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.12		0.070	0.0091	mg/Kg	4	✳	8270E	Total/NA
Acenaphthene	0.021	J	0.070	0.013	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.034	J	0.070	0.011	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.10		0.070	0.016	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.087		0.070	0.044	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.14		0.070	0.030	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.083		0.070	0.033	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.044	J	0.070	0.032	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.16		0.070	0.0069	mg/Kg	4	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.046	J	0.070	0.032	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.19		0.070	0.021	mg/Kg	4	✳	8270E	Total/NA
Fluorene	0.058	J	0.070	0.013	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.081		0.070	0.034	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.14		0.070	0.011	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.24		0.070	0.010	mg/Kg	4	✳	8270E	Total/NA
Phenol	0.038	J	0.23	0.037	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.16		0.070	0.010	mg/Kg	4	✳	8270E	Total/NA
2-Butoxyethanol	2.4		0.33	0.31	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.0082	J	0.050	0.0041	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-04 (4-5') (Continued)

Lab Sample ID: 240-182548-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.50	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0037	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0073	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0023	J B	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.017	J H B **	0.018	0.015	mg/Kg	1	*	8260D	Total/NA
Benzene	0.0017	J H	0.0035	0.00049	mg/Kg	1	*	8260D	Total/NA
Vinyl chloride	0.0029	J H	0.0035	0.0012	mg/Kg	1	*	8260D	Total/NA
2-Methylnaphthalene	0.18		0.070	0.0092	mg/Kg	4	*	8270E	Total/NA
Acenaphthene	0.028	J	0.070	0.013	mg/Kg	4	*	8270E	Total/NA
Acenaphthylene	0.021	J	0.070	0.019	mg/Kg	4	*	8270E	Total/NA
Anthracene	0.052	J	0.070	0.011	mg/Kg	4	*	8270E	Total/NA
Benzo[a]anthracene	0.22		0.070	0.016	mg/Kg	4	*	8270E	Total/NA
Benzo[a]pyrene	0.20		0.070	0.044	mg/Kg	4	*	8270E	Total/NA
Benzo[b]fluoranthene	0.25		0.070	0.030	mg/Kg	4	*	8270E	Total/NA
Benzo[g,h,i]perylene	0.14		0.070	0.033	mg/Kg	4	*	8270E	Total/NA
Benzo[k]fluoranthene	0.10		0.070	0.032	mg/Kg	4	*	8270E	Total/NA
Chrysene	0.25		0.070	0.0070	mg/Kg	4	*	8270E	Total/NA
Dibenz(a,h)anthracene	0.057	J	0.070	0.032	mg/Kg	4	*	8270E	Total/NA
Dibenzofuran	0.092	J	0.23	0.061	mg/Kg	4	*	8270E	Total/NA
Fluoranthene	0.47		0.070	0.021	mg/Kg	4	*	8270E	Total/NA
Fluorene	0.029	J	0.070	0.013	mg/Kg	4	*	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.12		0.070	0.034	mg/Kg	4	*	8270E	Total/NA
Naphthalene	0.093		0.070	0.011	mg/Kg	4	*	8270E	Total/NA
Phenanthrene	0.26		0.070	0.010	mg/Kg	4	*	8270E	Total/NA
Pyrene	0.41		0.070	0.010	mg/Kg	4	*	8270E	Total/NA
2-Butoxyethanol	2.9		0.33	0.31	mg/Kg	4	*	8270E	Total/NA
Arsenic	0.0092	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.34	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0038	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0059	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.0023	J B	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.049	J	0.24	0.040	mg/Kg	1	*	8260D	Total/NA
Methylcyclohexane	0.34	J	0.48	0.063	mg/Kg	1	*	8260D	Total/NA
Vinyl chloride	0.15	J	0.24	0.12	mg/Kg	1	*	8260D	Total/NA
Xylenes, Total	0.13	J	0.48	0.087	mg/Kg	1	*	8260D	Total/NA
Butyl acrylate	320		48	26	mg/Kg	20	*	8260D	Total/NA
Methyl acrylate	3.4		0.48	0.11	mg/Kg	1	*	8260D	Total/NA
2-Methylnaphthalene	0.29		0.089	0.012	mg/Kg	5	*	8270E	Total/NA
Acenaphthene	0.027	J	0.089	0.017	mg/Kg	5	*	8270E	Total/NA
Anthracene	0.038	J	0.089	0.014	mg/Kg	5	*	8270E	Total/NA
Benzaldehyde	0.14	J	0.59	0.14	mg/Kg	5	*	8270E	Total/NA
Benzo[a]anthracene	0.12		0.089	0.020	mg/Kg	5	*	8270E	Total/NA
Benzo[a]pyrene	0.098		0.089	0.055	mg/Kg	5	*	8270E	Total/NA
Benzo[b]fluoranthene	0.17		0.089	0.038	mg/Kg	5	*	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-06 (2-3') (Continued)

Lab Sample ID: 240-182548-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[g,h,i]perylene	0.081	J	0.089	0.042	mg/Kg	5	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.071	J	0.089	0.041	mg/Kg	5	✳	8270E	Total/NA
Chrysene	0.14		0.089	0.0088	mg/Kg	5	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.051	J	0.089	0.041	mg/Kg	5	✳	8270E	Total/NA
Dibenzofuran	0.11	J	0.30	0.077	mg/Kg	5	✳	8270E	Total/NA
Fluoranthene	0.26		0.089	0.026	mg/Kg	5	✳	8270E	Total/NA
Fluorene	0.030	J	0.089	0.016	mg/Kg	5	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.086	J	0.089	0.044	mg/Kg	5	✳	8270E	Total/NA
Naphthalene	0.18		0.089	0.014	mg/Kg	5	✳	8270E	Total/NA
Phenanthrene	0.25		0.089	0.013	mg/Kg	5	✳	8270E	Total/NA
Pyrene	0.24		0.089	0.013	mg/Kg	5	✳	8270E	Total/NA
2-Butoxyethanol	4.7		0.41	0.39	mg/Kg	5	✳	8270E	Total/NA
Arsenic	0.012	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.21	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0022	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.16		0.069	0.0091	mg/Kg	4	✳	8270E	Total/NA
Acenaphthene	0.020	J	0.069	0.013	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.051	J	0.069	0.011	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.17		0.069	0.016	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.16		0.069	0.043	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.21		0.069	0.030	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.092		0.069	0.033	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.073		0.069	0.032	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.21		0.069	0.0069	mg/Kg	4	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.047	J	0.069	0.032	mg/Kg	4	✳	8270E	Total/NA
Dibenzofuran	0.069	J	0.23	0.060	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.37		0.069	0.021	mg/Kg	4	✳	8270E	Total/NA
Fluorene	0.028	J	0.069	0.013	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.090		0.069	0.034	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.11		0.069	0.011	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.24		0.069	0.010	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.32		0.069	0.0099	mg/Kg	4	✳	8270E	Total/NA
2-Butoxyethanol	2.8		0.32	0.30	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.012	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.53	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0030	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.18	J	0.28	0.047	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	1.1	J	1.4	0.19	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.31	J	0.91	0.12	mg/Kg	50	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.47	J	0.91	0.39	mg/Kg	50	✳	8270E	Total/NA
Fluoranthene	0.27	J	0.91	0.27	mg/Kg	50	✳	8270E	Total/NA
Naphthalene	0.21	J	0.91	0.15	mg/Kg	50	✳	8270E	Total/NA
Phenanthrene	0.36	J	0.91	0.14	mg/Kg	50	✳	8270E	Total/NA
Pyrene	0.26	J	0.91	0.13	mg/Kg	50	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-08 (7-8') (Continued)

Lab Sample ID: 240-182548-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butoxyethanol	52		4.2	4.0	mg/Kg	50	✳	8270E	Total/NA
Arsenic	0.0082	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.56	B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0044	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0063	J	0.016	0.0028	mg/Kg	1	✳	8260D	Total/NA
Acetone	0.018	J B *+	0.020	0.017	mg/Kg	1	✳	8260D	Total/NA
Vinyl chloride	0.24	E	0.0040	0.0014	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	17	E	0.040	0.015	mg/Kg	1	✳	8260D	Total/NA
Methyl acrylate	0.066		0.0080	0.0025	mg/Kg	1	✳	8260D	Total/NA
2-Methylnaphthalene	0.096		0.069	0.0091	mg/Kg	4	✳	8270E	Total/NA
Acenaphthylene	0.11		0.069	0.019	mg/Kg	4	✳	8270E	Total/NA
Anthracene	0.025	J	0.069	0.011	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]anthracene	0.14		0.069	0.016	mg/Kg	4	✳	8270E	Total/NA
Benzo[a]pyrene	0.36		0.069	0.043	mg/Kg	4	✳	8270E	Total/NA
Benzo[b]fluoranthene	0.36		0.069	0.030	mg/Kg	4	✳	8270E	Total/NA
Benzo[g,h,i]perylene	0.19		0.069	0.033	mg/Kg	4	✳	8270E	Total/NA
Benzo[k]fluoranthene	0.15		0.069	0.032	mg/Kg	4	✳	8270E	Total/NA
Chrysene	0.18		0.069	0.0069	mg/Kg	4	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.071		0.069	0.032	mg/Kg	4	✳	8270E	Total/NA
Fluoranthene	0.16		0.069	0.021	mg/Kg	4	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	0.20		0.069	0.034	mg/Kg	4	✳	8270E	Total/NA
Naphthalene	0.055	J	0.069	0.011	mg/Kg	4	✳	8270E	Total/NA
Phenanthrene	0.11		0.069	0.010	mg/Kg	4	✳	8270E	Total/NA
Pyrene	0.17		0.069	0.0099	mg/Kg	4	✳	8270E	Total/NA
2-Butoxyethanol	3.0		0.32	0.30	mg/Kg	4	✳	8270E	Total/NA
Arsenic	0.014	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.11	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0042	J	0.050	0.00020	mg/L	1		6010D	TCLP
Lead	0.0095	J	0.050	0.0028	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.14	J	0.21	0.035	mg/Kg	1	✳	8260D	Total/NA
Methyl acetate	0.16	J	1.0	0.14	mg/Kg	1	✳	8260D	Total/NA
Methylcyclohexane	0.19	J	0.41	0.054	mg/Kg	1	✳	8260D	Total/NA
Xylenes, Total	0.11	J	0.41	0.075	mg/Kg	1	✳	8260D	Total/NA
Butyl acrylate	8.6		2.1	1.1	mg/Kg	1	✳	8260D	Total/NA
1,1'-Biphenyl	0.31	J	0.59	0.20	mg/Kg	10	✳	8270E	Total/NA
2-Methylnaphthalene	1.4	F1	0.18	0.023	mg/Kg	10	✳	8270E	Total/NA
Acenaphthene	0.23		0.18	0.034	mg/Kg	10	✳	8270E	Total/NA
Acenaphthylene	0.078	J	0.18	0.047	mg/Kg	10	✳	8270E	Total/NA
Anthracene	0.32		0.18	0.028	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]anthracene	2.8	F1	0.18	0.040	mg/Kg	10	✳	8270E	Total/NA
Benzo[a]pyrene	2.2	F1	0.18	0.11	mg/Kg	10	✳	8270E	Total/NA
Benzo[b]fluoranthene	2.3	F1	0.18	0.076	mg/Kg	10	✳	8270E	Total/NA
Benzo[g,h,i]perylene	1.3	F1	0.18	0.083	mg/Kg	10	✳	8270E	Total/NA
Benzo[k]fluoranthene	1.0	F1	0.18	0.081	mg/Kg	10	✳	8270E	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-10 (5-6') (Continued)

Lab Sample ID: 240-182548-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbazole	0.25	J	0.59	0.22	mg/Kg	10	✳	8270E	Total/NA
Chrysene	3.0	F1	0.18	0.017	mg/Kg	10	✳	8270E	Total/NA
Dibenz(a,h)anthracene	0.34		0.18	0.081	mg/Kg	10	✳	8270E	Total/NA
Dibenzofuran	1.0		0.59	0.15	mg/Kg	10	✳	8270E	Total/NA
Fluoranthene	5.2		0.18	0.052	mg/Kg	10	✳	8270E	Total/NA
Fluorene	0.18		0.18	0.032	mg/Kg	10	✳	8270E	Total/NA
Indeno[1,2,3-cd]pyrene	1.1	F1	0.18	0.086	mg/Kg	10	✳	8270E	Total/NA
Naphthalene	1.1		0.18	0.028	mg/Kg	10	✳	8270E	Total/NA
Phenanthrene	2.3	F1	0.18	0.026	mg/Kg	10	✳	8270E	Total/NA
Pyrene	4.6		0.18	0.025	mg/Kg	10	✳	8270E	Total/NA
2-Butoxyethanol	8.5		0.82	0.77	mg/Kg	10	✳	8270E	Total/NA
Arsenic	0.013	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.35	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0013	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	73	B	5.8	0.043	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	220	B	5.8	0.037	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	4.3	J	5.8	0.017	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	60	B	5.8	0.28	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	44	B	5.8	0.049	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDD	7.5		5.8	0.018	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	47		5.8	0.29	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	4.4	J I B	5.8	0.014	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	20		5.8	0.29	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	5.9	B	5.8	0.017	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	14	B	5.8	0.35	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	27	B	5.8	0.31	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	23	B	5.8	0.22	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	0.90	J B	1.2	0.0097	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	6.9		1.2	0.14	ng/Kg	1	✳	8290A	Total/NA
OCDD	290	B	12	0.041	ng/Kg	1	✳	8290A	Total/NA
OCDF	380	B	12	0.036	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	80	B	5.8	0.017	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	320	I B	5.8	0.31	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	150	B	5.8	0.043	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	360	B	5.8	0.043	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	43	I B	5.8	0.014	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	260	I B	5.8	0.25	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	20	I B	1.2	0.0097	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	170	I B	1.2	0.14	ng/Kg	1	✳	8290A	Total/NA

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	35	B	5.8	0.061	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,6,7,8-HpCDF	65	B	5.8	0.042	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDD	1.5	J	5.8	0.043	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8-HxCDF	18	B	5.8	0.16	ng/Kg	1	✳	8290A	Total/NA
1,2,3,4,7,8,9-HpCDF	13	B	5.8	0.056	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP06-10 (Continued)

Lab Sample ID: 240-182548-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,6,7,8-HxCDD	2.6	J	5.8	0.046	ng/Kg	1	✳	8290A	Total/NA
1,2,3,6,7,8-HxCDF	13		5.8	0.15	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDD	1.7	J B	5.8	0.038	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8-PeCDF	5.9		5.8	0.12	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDD	2.1	J B	5.8	0.042	ng/Kg	1	✳	8290A	Total/NA
1,2,3,7,8,9-HxCDF	4.0	J B	5.8	0.18	ng/Kg	1	✳	8290A	Total/NA
2,3,4,6,7,8-HxCDF	8.8	B	5.8	0.14	ng/Kg	1	✳	8290A	Total/NA
2,3,4,7,8-PeCDF	9.1	B	5.8	0.093	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDD	0.57	J B	1.2	0.018	ng/Kg	1	✳	8290A	Total/NA
2,3,7,8-TCDF	2.1		1.2	0.074	ng/Kg	1	✳	8290A	Total/NA
OCDD	200	B	12	0.080	ng/Kg	1	✳	8290A	Total/NA
OCDF	100	B	12	0.053	ng/Kg	1	✳	8290A	Total/NA
Total HxCDD	32	B	5.8	0.044	ng/Kg	1	✳	8290A	Total/NA
Total HxCDF	110	I B	5.8	0.16	ng/Kg	1	✳	8290A	Total/NA
Total HpCDD	81	B	5.8	0.061	ng/Kg	1	✳	8290A	Total/NA
Total HpCDF	110	B	5.8	0.049	ng/Kg	1	✳	8290A	Total/NA
Total PeCDD	20	I B	5.8	0.038	ng/Kg	1	✳	8290A	Total/NA
Total PeCDF	100	I B	5.8	0.11	ng/Kg	1	✳	8290A	Total/NA
Total TCDD	12	I B	1.2	0.018	ng/Kg	1	✳	8290A	Total/NA
Total TCDF	48	I B	1.2	0.074	ng/Kg	1	✳	8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	0.0041	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,1,2,2-Tetrachloroethane	ND	H	0.0041	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	0.0041	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,1,2-Trichloroethane	ND	H	0.0041	0.00093	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,1-Dichloroethane	ND	H	0.0041	0.00057	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,1-Dichloroethene	ND	H	0.0041	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,2,4-Trichlorobenzene	ND	H	0.0041	0.0021	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,2-Dibromo-3-Chloropropane	ND	H	0.0082	0.0030	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Ethylene Dibromide	ND	H	0.0041	0.00063	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,2-Dichlorobenzene	ND	H	0.0041	0.00091	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,2-Dichloroethane	ND	H	0.0041	0.00064	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,2-Dichloropropane	ND	H	0.0041	0.00070	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,3-Dichlorobenzene	ND	H	0.0041	0.00067	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
1,4-Dichlorobenzene	ND	H	0.0041	0.00073	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
2-Butanone (MEK)	0.0081	J H	0.016	0.0029	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
2-Hexanone	ND	H	0.016	0.0034	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
4-Methyl-2-pentanone (MIBK)	ND	H	0.016	0.0031	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Acetone	0.054	H *+ B	0.021	0.017	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Benzene	0.0040	J H	0.0041	0.00057	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Dichlorobromomethane	ND	H	0.0041	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Bromoform	ND	H	0.0041	0.0020	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Bromomethane	ND	H	0.0041	0.0034	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Carbon disulfide	0.00096	J H	0.0041	0.00096	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Carbon tetrachloride	ND	H	0.0041	0.0027	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Chlorobenzene	ND	H	0.0041	0.00075	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Chloroethane	ND	H	0.0041	0.0023	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Chloroform	ND	H	0.0041	0.00065	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Chloromethane	ND	H	0.0041	0.0019	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
cis-1,2-Dichloroethene	ND	H	0.0041	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
cis-1,3-Dichloropropene	ND	H	0.0041	0.0024	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Cyclohexane	ND	H	0.0082	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Chlorodibromomethane	ND	H	0.0041	0.0023	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Dichlorodifluoromethane	ND	H	0.0041	0.00078	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Ethylbenzene	ND	H	0.0041	0.00086	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Isopropylbenzene	ND	H	0.0041	0.0016	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Methyl acetate	ND	H	0.021	0.0028	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Methyl tert-butyl ether	ND	H	0.0041	0.0016	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Methylcyclohexane	ND	H	0.0082	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Methylene Chloride	ND	H	0.021	0.0099	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Styrene	ND	H	0.0041	0.00095	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Tetrachloroethene	ND	H	0.0041	0.00060	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Toluene	ND	H	0.0041	0.00064	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
trans-1,2-Dichloroethene	ND	H	0.0041	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
trans-1,3-Dichloropropene	ND	H	0.0041	0.0031	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Trichloroethene	ND	H	0.0041	0.00052	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Trichlorofluoromethane	ND	H	0.0041	0.0022	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Vinyl chloride	ND	H	0.0041	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Xylenes, Total	ND	H	0.0082	0.0013	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1
Butyl acrylate	ND	H	0.041	0.016	mg/Kg	✱	03/26/23 12:51	03/29/23 02:22	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.3

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND	H	0.0082	0.0025	mg/Kg	☼	03/26/23 12:51	03/29/23 02:22	1
2-Ethylhexyl acrylate	ND	H	0.041	0.019	mg/Kg	☼	03/26/23 12:51	03/29/23 02:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	123		56 - 125				03/26/23 12:51	03/29/23 02:22	1
Dibromofluoromethane (Surr)	105		41 - 138				03/26/23 12:51	03/29/23 02:22	1
4-Bromofluorobenzene (Surr)	132		41 - 143				03/26/23 12:51	03/29/23 02:22	1
1,2-Dichloroethane-d4 (Surr)	129	S1+	58 - 125				03/26/23 12:51	03/29/23 02:22	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.11	0.039	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
bis (2-chloroisopropyl) ether	ND		0.23	0.023	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4,5-Trichlorophenol	ND		0.34	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4,6-Trichlorophenol	ND		0.34	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4-Dichlorophenol	ND		0.34	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4-Dimethylphenol	ND		0.34	0.092	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4-Dinitrophenol	ND		0.76	0.33	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,4-Dinitrotoluene	ND		0.46	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2,6-Dinitrotoluene	ND		0.46	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Chloronaphthalene	ND		0.11	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Chlorophenol	ND		0.11	0.023	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Methylnaphthalene	0.024	J	0.034	0.0045	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Methylphenol	ND		0.46	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Nitroaniline	ND		0.46	0.092	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Nitrophenol	ND		0.11	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
3,3'-Dichlorobenzidine	ND		0.23	0.099	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
3-Nitroaniline	ND		0.46	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4,6-Dinitro-2-methylphenol	ND		0.76	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Bromophenyl phenyl ether	ND		0.11	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Chloro-3-methylphenol	ND		0.34	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Chloroaniline	ND		0.34	0.069	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Chlorophenyl phenyl ether	ND		0.11	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Nitroaniline	ND		0.46	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
4-Nitrophenol	ND		0.76	0.22	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Acenaphthene	ND		0.034	0.0066	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Acenaphthylene	ND		0.034	0.0092	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Acetophenone	ND		0.23	0.025	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Anthracene	ND		0.034	0.0055	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Atrazine	ND		0.46	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzaldehyde	ND		0.23	0.053	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzo[a]anthracene	0.013	J	0.034	0.0078	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzo[a]pyrene	ND		0.034	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzo[b]fluoranthene	0.027	J	0.034	0.015	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzo[g,h,i]perylene	0.026	J	0.034	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Benzo[k]fluoranthene	ND		0.034	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Bis(2-chloroethoxy)methane	ND		0.23	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Bis(2-chloroethyl)ether	ND		0.23	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Bis(2-ethylhexyl) phthalate	ND		0.16	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Butyl benzyl phthalate	ND		0.16	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.3

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.76	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Carbazole	ND		0.11	0.044	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Chrysene	0.017	J	0.034	0.0034	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Dibenz(a,h)anthracene	ND		0.034	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Dibenzofuran	ND		0.11	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Diethyl phthalate	ND		0.16	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Dimethyl phthalate	ND		0.16	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Di-n-butyl phthalate	ND		0.16	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Di-n-octyl phthalate	ND		0.16	0.064	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Fluoranthene	0.022	J	0.034	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Fluorene	ND		0.034	0.0063	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Hexachlorobenzene	ND		0.034	0.0065	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Hexachlorobutadiene	ND		0.11	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Hexachlorocyclopentadiene	ND		0.76	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Hexachloroethane	ND		0.11	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Indeno[1,2,3-cd]pyrene	0.019	J	0.034	0.017	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Isophorone	ND		0.11	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
N-Nitrosodi-n-propylamine	ND		0.11	0.025	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
N-Nitrosodiphenylamine	ND		0.11	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Naphthalene	0.013	J	0.034	0.0055	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Nitrobenzene	ND		0.23	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Pentachlorophenol	ND		0.34	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Phenanthrene	0.040		0.034	0.0051	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Phenol	ND		0.11	0.018	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
Pyrene	0.029	J	0.034	0.0049	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
3 & 4 Methylphenol	ND		0.92	0.067	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2
2-Butoxyethanol	1.2		0.16	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 09:43	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	103		46 - 137	03/28/23 10:04	03/30/23 09:43	2
Phenol-d5 (Surr)	59		26 - 120	03/28/23 10:04	03/30/23 09:43	2
Nitrobenzene-d5 (Surr)	50		25 - 120	03/28/23 10:04	03/30/23 09:43	2
2-Fluorophenol (Surr)	56		20 - 120	03/28/23 10:04	03/30/23 09:43	2
2-Fluorobiphenyl (Surr)	65		34 - 120	03/28/23 10:04	03/30/23 09:43	2
2,4,6-Tribromophenol (Surr)	95		10 - 120	03/28/23 10:04	03/30/23 09:43	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0085	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 14:58	1
Barium	0.16	J B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 14:58	1
Cadmium	0.0022	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 14:58	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 14:58	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 14:58	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 14:58	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 14:58	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:07	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.3		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	13.7		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	0.0048	0.0017	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,1,2,2-Tetrachloroethane	ND	H	0.0048	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	0.0048	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,1,2-Trichloroethane	ND	H	0.0048	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,1-Dichloroethane	ND	H	0.0048	0.00066	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,1-Dichloroethene	ND	H	0.0048	0.0017	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,2,4-Trichlorobenzene	ND	H	0.0048	0.0024	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,2-Dibromo-3-Chloropropane	ND	H	0.0096	0.0035	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Ethylene Dibromide	ND	H	0.0048	0.00074	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,2-Dichlorobenzene	ND	H	0.0048	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,2-Dichloroethane	ND	H	0.0048	0.00074	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,2-Dichloropropane	ND	H	0.0048	0.00082	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,3-Dichlorobenzene	ND	H	0.0048	0.00078	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
1,4-Dichlorobenzene	ND	H	0.0048	0.00085	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
2-Butanone (MEK)	0.0037	J H	0.019	0.0034	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
2-Hexanone	ND	H	0.019	0.0039	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
4-Methyl-2-pentanone (MIBK)	ND	H	0.019	0.0036	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Acetone	0.022	J H B **	0.024	0.020	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Benzene	ND	H	0.0048	0.00067	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Dichlorobromomethane	ND	H	0.0048	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Bromoform	ND	H	0.0048	0.0023	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Bromomethane	ND	H	0.0048	0.0040	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Carbon disulfide	ND	H	0.0048	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Carbon tetrachloride	ND	H	0.0048	0.0031	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Chlorobenzene	ND	H	0.0048	0.00088	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Chloroethane	ND	H	0.0048	0.0026	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Chloroform	ND	H	0.0048	0.00076	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Chloromethane	ND	H	0.0048	0.0022	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
cis-1,2-Dichloroethene	ND	H	0.0048	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
cis-1,3-Dichloropropene	ND	H	0.0048	0.0028	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Cyclohexane	ND	H	0.0096	0.0013	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Chlorodibromomethane	ND	H	0.0048	0.0027	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Dichlorodifluoromethane	ND	H	0.0048	0.00090	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Ethylbenzene	ND	H	0.0048	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Isopropylbenzene	ND	H	0.0048	0.0018	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Methyl acetate	ND	H	0.024	0.0033	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Methyl tert-butyl ether	ND	H	0.0048	0.0019	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Methylcyclohexane	ND	H	0.0096	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Methylene Chloride	ND	H	0.024	0.012	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Styrene	ND	H	0.0048	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Tetrachloroethene	ND	H	0.0048	0.00070	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Toluene	ND	H	0.0048	0.00074	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
trans-1,2-Dichloroethene	ND	H	0.0048	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
trans-1,3-Dichloropropene	ND	H	0.0048	0.0036	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Trichloroethene	ND	H	0.0048	0.00061	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Trichlorofluoromethane	ND	H	0.0048	0.0026	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Vinyl chloride	ND	H	0.0048	0.0017	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Xylenes, Total	ND	H	0.0096	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1
Butyl acrylate	0.074	H	0.048	0.019	mg/Kg	✱	03/26/23 12:51	03/29/23 02:47	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	0.0053	J H	0.0096	0.0030	mg/Kg	☼	03/26/23 12:51	03/29/23 02:47	1
2-Ethylhexyl acrylate	ND	H	0.048	0.023	mg/Kg	☼	03/26/23 12:51	03/29/23 02:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	120		56 - 125				03/26/23 12:51	03/29/23 02:47	1
Dibromofluoromethane (Surr)	106		41 - 138				03/26/23 12:51	03/29/23 02:47	1
4-Bromofluorobenzene (Surr)	129		41 - 143				03/26/23 12:51	03/29/23 02:47	1
1,2-Dichloroethane-d4 (Surr)	125		58 - 125				03/26/23 12:51	03/29/23 02:47	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
bis (2-chloroisopropyl) ether	ND		6.0	0.60	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4,5-Trichlorophenol	ND		9.0	4.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4,6-Trichlorophenol	ND		9.0	3.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4-Dichlorophenol	ND		9.0	2.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4-Dimethylphenol	ND		9.0	2.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4-Dinitrophenol	ND		20	8.5	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,4-Dinitrotoluene	ND		12	3.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2,6-Dinitrotoluene	ND		12	3.3	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Chloronaphthalene	ND		3.0	0.84	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Chlorophenol	ND		3.0	0.60	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Methylnaphthalene	0.79	J	0.90	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Methylphenol	ND		12	1.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Nitroaniline	ND		12	2.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Nitrophenol	ND		3.0	0.78	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
3,3'-Dichlorobenzidine	ND		6.0	2.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
3-Nitroaniline	ND		12	2.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Bromophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Chloro-3-methylphenol	ND		9.0	2.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Chloroaniline	ND		9.0	1.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Chlorophenyl phenyl ether	ND		3.0	0.84	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Nitroaniline	ND		12	3.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
4-Nitrophenol	ND		20	5.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Acenaphthene	ND		0.90	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Acenaphthylene	ND		0.90	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Acetophenone	ND		6.0	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Anthracene	ND		0.90	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Atrazine	ND		12	2.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzaldehyde	ND		6.0	1.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzo[a]anthracene	0.39	J	0.90	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzo[a]pyrene	ND		0.90	0.56	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzo[b]fluoranthene	0.66	J	0.90	0.39	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzo[g,h,i]perylene	ND		0.90	0.42	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Benzo[k]fluoranthene	0.41	J	0.90	0.41	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Bis(2-chloroethoxy)methane	ND		6.0	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Bis(2-chloroethyl)ether	ND		6.0	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Bis(2-ethylhexyl) phthalate	ND		4.2	3.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		20	4.5	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Carbazole	ND		3.0	1.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Chrysene	0.53	J	0.90	0.089	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Dibenz(a,h)anthracene	ND		0.90	0.41	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Dibenzofuran	ND		3.0	0.78	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Diethyl phthalate	ND		4.2	1.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Dimethyl phthalate	ND		4.2	0.84	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Di-n-butyl phthalate	ND		4.2	3.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Fluoranthene	0.75	J	0.90	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Fluorene	ND		0.90	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Hexachlorobenzene	ND		0.90	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Hexachlorobutadiene	ND		3.0	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Hexachlorocyclopentadiene	ND		20	3.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Hexachloroethane	ND		3.0	0.54	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Indeno[1,2,3-cd]pyrene	0.51	J	0.90	0.44	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Isophorone	ND		3.0	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
N-Nitrosodi-n-propylamine	ND		3.0	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
N-Nitrosodiphenylamine	ND		3.0	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Naphthalene	0.55	J	0.90	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Nitrobenzene	ND		6.0	0.78	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Pentachlorophenol	ND		9.0	3.5	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Phenanthrene	0.95		0.90	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Phenol	ND		3.0	0.48	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
Pyrene	0.67	J	0.90	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
3 & 4 Methylphenol	ND		24	1.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50
2-Butoxyethanol	59		4.2	3.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:06	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	135		46 - 137	03/28/23 10:04	03/30/23 10:06	50
Phenol-d5 (Surr)	109		26 - 120	03/28/23 10:04	03/30/23 10:06	50
Nitrobenzene-d5 (Surr)	76		25 - 120	03/28/23 10:04	03/30/23 10:06	50
2-Fluorophenol (Surr)	88		20 - 120	03/28/23 10:04	03/30/23 10:06	50
2-Fluorobiphenyl (Surr)	114		34 - 120	03/28/23 10:04	03/30/23 10:06	50
2,4,6-Tribromophenol (Surr)	102		10 - 120	03/28/23 10:04	03/30/23 10:06	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:03	1
Barium	0.18	J B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:03	1
Cadmium	0.0024	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:03	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:03	1
Lead	0.0034	J	0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:03	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:03	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:03	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:10	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.8		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	16.2		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.38	0.12	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,1,2,2-Tetrachloroethane	ND		0.38	0.23	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.38	0.10	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,1,2-Trichloroethane	ND		0.38	0.087	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,1-Dichloroethane	ND		0.38	0.073	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,1-Dichloroethene	ND		0.38	0.12	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,2,4-Trichlorobenzene	ND		0.38	0.20	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,2-Dibromo-3-Chloropropane	ND		0.76	0.34	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Ethylene Dibromide	ND		0.38	0.12	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,2-Dichlorobenzene	ND		0.38	0.18	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,2-Dichloroethane	ND		0.38	0.071	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,2-Dichloropropane	ND		0.38	0.056	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,3-Dichlorobenzene	ND		0.38	0.070	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
1,4-Dichlorobenzene	ND		0.38	0.084	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
2-Butanone (MEK)	ND		1.5	0.24	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
2-Hexanone	ND		1.5	0.40	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
4-Methyl-2-pentanone (MIBK)	ND		1.5	0.36	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Acetone	0.86	J	1.5	0.37	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Benzene	0.17	J	0.38	0.064	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Dichlorobromomethane	ND		0.38	0.093	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Bromoform	ND		0.38	0.35	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Bromomethane	ND		0.38	0.25	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Carbon disulfide	ND		0.38	0.16	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Carbon tetrachloride	ND		0.38	0.16	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Chlorobenzene	ND		0.38	0.053	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Chloroethane	ND		0.38	0.23	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Chloroform	ND		0.38	0.082	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Chloromethane	ND		0.38	0.10	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
cis-1,2-Dichloroethene	ND		0.38	0.061	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
cis-1,3-Dichloropropene	ND		0.38	0.19	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Cyclohexane	2.2		0.76	0.25	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Chlorodibromomethane	ND		0.38	0.18	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Dichlorodifluoromethane	ND		0.38	0.081	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Ethylbenzene	0.18	J	0.38	0.071	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Isopropylbenzene	0.063	J	0.38	0.058	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Methyl acetate	0.43	J	1.9	0.26	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Methyl tert-butyl ether	ND		0.38	0.056	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Methylcyclohexane	7.4		0.76	0.10	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Methylene Chloride	ND		0.76	0.58	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Styrene	ND		0.38	0.079	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Tetrachloroethene	ND		0.38	0.15	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Toluene	0.79		0.38	0.36	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
trans-1,2-Dichloroethene	ND		0.38	0.094	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
trans-1,3-Dichloropropene	ND		0.38	0.16	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Trichloroethene	ND		0.38	0.22	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Trichlorofluoromethane	ND		0.38	0.21	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Vinyl chloride	0.38		0.38	0.19	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Xylenes, Total	2.6		0.76	0.14	mg/Kg	✱	03/27/23 18:16	03/30/23 19:08	1
Butyl acrylate	2300		380	210	mg/Kg	✱	03/27/23 18:16	03/28/23 10:25	100

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 81.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	2.7		0.76	0.18	mg/Kg	☼	03/27/23 18:16	03/30/23 19:08	1
2-Ethylhexyl acrylate	ND		3.8	2.8	mg/Kg	☼	03/27/23 18:16	03/30/23 19:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	76		56 - 125				03/27/23 18:16	03/28/23 10:25	100
Toluene-d8 (Surr)	80		56 - 125				03/27/23 18:16	03/30/23 19:08	1
Dibromofluoromethane (Surr)	79		41 - 138				03/27/23 18:16	03/28/23 10:25	100
Dibromofluoromethane (Surr)	70		41 - 138				03/27/23 18:16	03/30/23 19:08	1
4-Bromofluorobenzene (Surr)	70		41 - 143				03/27/23 18:16	03/28/23 10:25	100
4-Bromofluorobenzene (Surr)	74		41 - 143				03/27/23 18:16	03/30/23 19:08	1
1,2-Dichloroethane-d4 (Surr)	84		58 - 125				03/27/23 18:16	03/28/23 10:25	100
1,2-Dichloroethane-d4 (Surr)	69		58 - 125				03/27/23 18:16	03/30/23 19:08	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.21	J	0.25	0.084	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
bis (2-chloroisopropyl) ether	ND		0.49	0.049	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4,5-Trichlorophenol	ND		0.74	0.34	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4,6-Trichlorophenol	ND		0.74	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4-Dichlorophenol	ND		0.74	0.22	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4-Dimethylphenol	ND		0.74	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4-Dinitrophenol	ND		1.6	0.70	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,4-Dinitrotoluene	ND		0.99	0.31	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2,6-Dinitrotoluene	ND		0.99	0.28	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Chloronaphthalene	ND		0.25	0.069	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Chlorophenol	ND		0.25	0.049	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Methylnaphthalene	1.1		0.074	0.0097	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Methylphenol	ND		0.99	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Nitroaniline	ND		0.99	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Nitrophenol	ND		0.25	0.064	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
3,3'-Dichlorobenzidine	ND		0.49	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
3-Nitroaniline	ND		0.99	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4,6-Dinitro-2-methylphenol	ND		1.6	0.40	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Bromophenyl phenyl ether	ND		0.25	0.069	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Chloro-3-methylphenol	ND		0.74	0.22	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Chloroaniline	ND		0.74	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Chlorophenyl phenyl ether	ND		0.25	0.069	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Nitroaniline	ND		0.99	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
4-Nitrophenol	ND		1.6	0.46	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Acenaphthene	0.12		0.074	0.014	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Acenaphthylene	0.036	J	0.074	0.020	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Acetophenone	ND		0.49	0.054	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Anthracene	0.096		0.074	0.012	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Atrazine	ND		0.99	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzaldehyde	ND		0.49	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzo[a]anthracene	0.28		0.074	0.017	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzo[a]pyrene	0.20		0.074	0.046	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzo[b]fluoranthene	0.28		0.074	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzo[g,h,i]perylene	0.19		0.074	0.035	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Benzo[k]fluoranthene	0.10		0.074	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 81.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.49	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Bis(2-chloroethyl)ether	ND		0.49	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Bis(2-ethylhexyl) phthalate	ND		0.35	0.25	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Butyl benzyl phthalate	ND		0.35	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Caprolactam	ND		1.6	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Carbazole	ND		0.25	0.094	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Chrysene	0.45		0.074	0.0074	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Dibenz(a,h)anthracene	0.065	J	0.074	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Dibenzofuran	0.80		0.25	0.064	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Diethyl phthalate	ND		0.35	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Dimethyl phthalate	ND		0.35	0.069	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Di-n-butyl phthalate	ND		0.35	0.25	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Di-n-octyl phthalate	ND		0.35	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Fluoranthene	0.65		0.074	0.022	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Fluorene	0.12		0.074	0.014	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Hexachlorobenzene	ND		0.074	0.014	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Hexachlorobutadiene	ND		0.25	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Hexachlorocyclopentadiene	ND		1.6	0.31	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Hexachloroethane	ND		0.25	0.044	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Indeno[1,2,3-cd]pyrene	0.13		0.074	0.036	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Isophorone	ND		0.25	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
N-Nitrosodi-n-propylamine	ND		0.25	0.054	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
N-Nitrosodiphenylamine	ND		0.25	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Naphthalene	0.79		0.074	0.012	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Nitrobenzene	ND		0.49	0.064	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Pentachlorophenol	ND		0.74	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Phenanthrene	1.7		0.074	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Phenol	ND		0.25	0.040	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
Pyrene	0.57		0.074	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
3 & 4 Methylphenol	ND		2.0	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4
2-Butoxyethanol	6.4		0.35	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 12:22	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	99		46 - 137	03/28/23 10:04	03/30/23 12:22	4
Phenol-d5 (Surr)	70		26 - 120	03/28/23 10:04	03/30/23 12:22	4
Nitrobenzene-d5 (Surr)	48		25 - 120	03/28/23 10:04	03/30/23 12:22	4
2-Fluorophenol (Surr)	55		20 - 120	03/28/23 10:04	03/30/23 12:22	4
2-Fluorobiphenyl (Surr)	75		34 - 120	03/28/23 10:04	03/30/23 12:22	4
2,4,6-Tribromophenol (Surr)	122	S1+	10 - 120	03/28/23 10:04	03/30/23 12:22	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0094	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:08	1
Barium	0.30	J B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:08	1
Cadmium	0.0018	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:08	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:08	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:08	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:08	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 81.0

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	81.0		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	19.0		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.29	0.089	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,1,2,2-Tetrachloroethane	ND		0.29	0.17	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.29	0.076	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,1,2-Trichloroethane	ND		0.29	0.065	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,1-Dichloroethane	ND		0.29	0.055	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,1-Dichloroethene	ND		0.29	0.094	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,2,4-Trichlorobenzene	ND		0.29	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,2-Dibromo-3-Chloropropane	ND		0.57	0.25	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Ethylene Dibromide	ND		0.29	0.090	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,2-Dichlorobenzene	ND		0.29	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,2-Dichloroethane	ND		0.29	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,2-Dichloropropane	ND		0.29	0.042	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,3-Dichlorobenzene	ND		0.29	0.052	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
1,4-Dichlorobenzene	ND		0.29	0.063	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
2-Butanone (MEK)	ND		1.1	0.18	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
2-Hexanone	ND		1.1	0.30	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
4-Methyl-2-pentanone (MIBK)	ND		1.1	0.27	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Acetone	ND		1.1	0.28	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Benzene	ND		0.29	0.048	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Dichlorobromomethane	ND		0.29	0.069	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Bromoform	ND		0.29	0.26	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Bromomethane	ND		0.29	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Carbon disulfide	ND		0.29	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Carbon tetrachloride	ND		0.29	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Chlorobenzene	ND		0.29	0.040	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Chloroethane	ND		0.29	0.17	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Chloroform	ND		0.29	0.062	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Chloromethane	ND		0.29	0.075	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
cis-1,2-Dichloroethene	ND		0.29	0.046	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
cis-1,3-Dichloropropene	ND		0.29	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Cyclohexane	ND		0.57	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Chlorodibromomethane	ND		0.29	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Dichlorodifluoromethane	ND		0.29	0.060	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Ethylbenzene	ND		0.29	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Isopropylbenzene	ND		0.29	0.043	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Methyl acetate	ND		1.4	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Methyl tert-butyl ether	ND		0.29	0.042	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Methylcyclohexane	ND		0.57	0.075	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Methylene Chloride	ND		0.57	0.44	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Styrene	ND		0.29	0.059	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Tetrachloroethene	ND		0.29	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Toluene	ND		0.29	0.27	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
trans-1,2-Dichloroethene	ND		0.29	0.071	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
trans-1,3-Dichloropropene	ND		0.29	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Trichloroethene	ND		0.29	0.16	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Trichlorofluoromethane	ND		0.29	0.16	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Vinyl chloride	ND		0.29	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Xylenes, Total	ND		0.57	0.10	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1
Butyl acrylate	ND		2.9	1.5	mg/Kg	✱	03/27/23 18:16	03/28/23 12:11	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.8

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.57	0.13	mg/Kg	☼	03/27/23 18:16	03/28/23 12:11	1
2-Ethylhexyl acrylate	ND		2.9	2.1	mg/Kg	☼	03/27/23 18:16	03/28/23 12:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125				03/27/23 18:16	03/28/23 12:11	1
Dibromofluoromethane (Surr)	76		41 - 138				03/27/23 18:16	03/28/23 12:11	1
4-Bromofluorobenzene (Surr)	70		41 - 143				03/27/23 18:16	03/28/23 12:11	1
1,2-Dichloroethane-d4 (Surr)	80		58 - 125				03/27/23 18:16	03/28/23 12:11	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.23	0.079	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
bis (2-chloroisopropyl) ether	ND		0.47	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4,5-Trichlorophenol	ND		0.70	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4,6-Trichlorophenol	ND		0.70	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4-Dichlorophenol	ND		0.70	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4-Dimethylphenol	ND		0.70	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4-Dinitrophenol	ND		1.5	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,4-Dinitrotoluene	ND		0.93	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2,6-Dinitrotoluene	ND		0.93	0.26	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Chloronaphthalene	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Chlorophenol	ND		0.23	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Methylnaphthalene	0.12		0.070	0.0091	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Methylphenol	ND		0.93	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Nitroaniline	ND		0.93	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Nitrophenol	ND		0.23	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
3,3'-Dichlorobenzidine	ND		0.47	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
3-Nitroaniline	ND		0.93	0.23	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4,6-Dinitro-2-methylphenol	ND		1.5	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Bromophenyl phenyl ether	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Chloro-3-methylphenol	ND		0.70	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Chloroaniline	ND		0.70	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Chlorophenyl phenyl ether	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Nitroaniline	ND		0.93	0.28	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
4-Nitrophenol	ND		1.5	0.44	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Acenaphthene	0.021	J	0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Acenaphthylene	ND		0.070	0.019	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Acetophenone	ND		0.47	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Anthracene	0.034	J	0.070	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Atrazine	ND		0.93	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzaldehyde	ND		0.47	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzo[a]anthracene	0.10		0.070	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzo[a]pyrene	0.087		0.070	0.044	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzo[b]fluoranthene	0.14		0.070	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzo[g,h,i]perylene	0.083		0.070	0.033	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Benzo[k]fluoranthene	0.044	J	0.070	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Bis(2-chloroethoxy)methane	ND		0.47	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Bis(2-chloroethyl)ether	ND		0.47	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Bis(2-ethylhexyl) phthalate	ND		0.33	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Butyl benzyl phthalate	ND		0.33	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.8

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.5	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Carbazole	ND		0.23	0.089	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Chrysene	0.16		0.070	0.0069	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Dibenz(a,h)anthracene	0.046	J	0.070	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Dibenzofuran	ND		0.23	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Diethyl phthalate	ND		0.33	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Dimethyl phthalate	ND		0.33	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Di-n-butyl phthalate	ND		0.33	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Di-n-octyl phthalate	ND		0.33	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Fluoranthene	0.19		0.070	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Fluorene	0.058	J	0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Hexachlorobenzene	ND		0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Hexachlorobutadiene	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Hexachlorocyclopentadiene	ND		1.5	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Hexachloroethane	ND		0.23	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Indeno[1,2,3-cd]pyrene	0.081		0.070	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Isophorone	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
N-Nitrosodi-n-propylamine	ND		0.23	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
N-Nitrosodiphenylamine	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Naphthalene	0.14		0.070	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Nitrobenzene	ND		0.47	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Pentachlorophenol	ND		0.70	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Phenanthrene	0.24		0.070	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Phenol	0.038	J	0.23	0.037	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Pyrene	0.16		0.070	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
3 & 4 Methylphenol	ND		1.9	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
2-Butoxyethanol	2.4		0.33	0.31	mg/Kg	☼	03/28/23 10:04	03/30/23 12:45	4
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		46 - 137				03/28/23 10:04	03/30/23 12:45	4
Phenol-d5 (Surr)	72		26 - 120				03/28/23 10:04	03/30/23 12:45	4
Nitrobenzene-d5 (Surr)	57		25 - 120				03/28/23 10:04	03/30/23 12:45	4
2-Fluorophenol (Surr)	60		20 - 120				03/28/23 10:04	03/30/23 12:45	4
2-Fluorobiphenyl (Surr)	78		34 - 120				03/28/23 10:04	03/30/23 12:45	4
2,4,6-Tribromophenol (Surr)	100		10 - 120				03/28/23 10:04	03/30/23 12:45	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0082	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:12	1
Barium	0.50	B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:12	1
Cadmium	0.0037	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:12	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:12	1
Lead	0.0073	J	0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:12	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:12	1
Silver	0.0023	J B	0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:14	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.8

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.8		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	15.2		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 85.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	0.0035	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,1,2,2-Tetrachloroethane	ND	H	0.0035	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	0.0035	0.00090	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,1,2-Trichloroethane	ND	H	0.0035	0.00079	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,1-Dichloroethane	ND	H	0.0035	0.00049	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,1-Dichloroethene	ND	H	0.0035	0.0013	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,2,4-Trichlorobenzene	ND	H	0.0035	0.0018	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,2-Dibromo-3-Chloropropane	ND	H	0.0070	0.0025	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Ethylene Dibromide	ND	H	0.0035	0.00054	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,2-Dichlorobenzene	ND	H	0.0035	0.00078	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,2-Dichloroethane	ND	H	0.0035	0.00054	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,2-Dichloropropane	ND	H	0.0035	0.00060	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,3-Dichlorobenzene	ND	H	0.0035	0.00057	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
1,4-Dichlorobenzene	ND	H	0.0035	0.00062	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
2-Butanone (MEK)	ND	H	0.014	0.0025	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
2-Hexanone	ND	H	0.014	0.0029	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
4-Methyl-2-pentanone (MIBK)	ND	H	0.014	0.0026	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Acetone	0.017	J H B **	0.018	0.015	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Benzene	0.0017	J H	0.0035	0.00049	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Dichlorobromomethane	ND	H	0.0035	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Bromoform	ND	H	0.0035	0.0017	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Bromomethane	ND	H	0.0035	0.0029	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Carbon disulfide	ND	H	0.0035	0.00082	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Carbon tetrachloride	ND	H	0.0035	0.0023	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Chlorobenzene	ND	H	0.0035	0.00064	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Chloroethane	ND	H	0.0035	0.0019	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Chloroform	ND	H	0.0035	0.00055	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Chloromethane	ND	H	0.0035	0.0016	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
cis-1,2-Dichloroethene	ND	H	0.0035	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
cis-1,3-Dichloropropene	ND	H	0.0035	0.0020	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Cyclohexane	ND	H	0.0070	0.00096	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Chlorodibromomethane	ND	H	0.0035	0.0020	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Dichlorodifluoromethane	ND	H	0.0035	0.00066	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Ethylbenzene	ND	H	0.0035	0.00073	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Isopropylbenzene	ND	H	0.0035	0.0013	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Methyl acetate	ND	H	0.018	0.0024	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Methyl tert-butyl ether	ND	H	0.0035	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Methylcyclohexane	ND	H	0.0070	0.00086	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Methylene Chloride	ND	H	0.018	0.0084	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Styrene	ND	H	0.0035	0.00081	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Tetrachloroethene	ND	H	0.0035	0.00051	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Toluene	ND	H	0.0035	0.00054	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
trans-1,2-Dichloroethene	ND	H	0.0035	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
trans-1,3-Dichloropropene	ND	H	0.0035	0.0026	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Trichloroethene	ND	H	0.0035	0.00044	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Trichlorofluoromethane	ND	H	0.0035	0.0019	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Vinyl chloride	0.0029	J H	0.0035	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Xylenes, Total	ND	H	0.0070	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1
Butyl acrylate	ND	H	0.035	0.014	mg/Kg	✱	03/26/23 12:51	03/29/23 12:33	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 85.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND	H	0.0070	0.0022	mg/Kg	☼	03/26/23 12:51	03/29/23 12:33	1
2-Ethylhexyl acrylate	ND	H	0.035	0.017	mg/Kg	☼	03/26/23 12:51	03/29/23 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	78		56 - 125				03/26/23 12:51	03/29/23 12:33	1
Dibromofluoromethane (Surr)	88		41 - 138				03/26/23 12:51	03/29/23 12:33	1
4-Bromofluorobenzene (Surr)	61		41 - 143				03/26/23 12:51	03/29/23 12:33	1
1,2-Dichloroethane-d4 (Surr)	89		58 - 125				03/26/23 12:51	03/29/23 12:33	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.23	0.080	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
bis (2-chloroisopropyl) ether	ND		0.47	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4,5-Trichlorophenol	ND		0.70	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4,6-Trichlorophenol	ND		0.70	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4-Dichlorophenol	ND		0.70	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4-Dimethylphenol	ND		0.70	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4-Dinitrophenol	ND		1.5	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,4-Dinitrotoluene	ND		0.94	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2,6-Dinitrotoluene	ND		0.94	0.26	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Chloronaphthalene	ND		0.23	0.066	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Chlorophenol	ND		0.23	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Methylnaphthalene	0.18		0.070	0.0092	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Methylphenol	ND		0.94	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Nitroaniline	ND		0.94	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Nitrophenol	ND		0.23	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
3,3'-Dichlorobenzidine	ND		0.47	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
3-Nitroaniline	ND		0.94	0.23	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4,6-Dinitro-2-methylphenol	ND		1.5	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Bromophenyl phenyl ether	ND		0.23	0.066	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Chloro-3-methylphenol	ND		0.70	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Chloroaniline	ND		0.70	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Chlorophenyl phenyl ether	ND		0.23	0.066	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Nitroaniline	ND		0.94	0.28	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
4-Nitrophenol	ND		1.5	0.44	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Acenaphthene	0.028	J	0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Acenaphthylene	0.021	J	0.070	0.019	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Acetophenone	ND		0.47	0.052	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Anthracene	0.052	J	0.070	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Atrazine	ND		0.94	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzaldehyde	ND		0.47	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzo[a]anthracene	0.22		0.070	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzo[a]pyrene	0.20		0.070	0.044	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzo[b]fluoranthene	0.25		0.070	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzo[g,h,i]perylene	0.14		0.070	0.033	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Benzo[k]fluoranthene	0.10		0.070	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Bis(2-chloroethoxy)methane	ND		0.47	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Bis(2-chloroethyl)ether	ND		0.47	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Bis(2-ethylhexyl) phthalate	ND		0.33	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Butyl benzyl phthalate	ND		0.33	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 85.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.5	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Carbazole	ND		0.23	0.089	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Chrysene	0.25		0.070	0.0070	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Dibenz(a,h)anthracene	0.057 J		0.070	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Dibenzofuran	0.092 J		0.23	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Diethyl phthalate	ND		0.33	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Dimethyl phthalate	ND		0.33	0.066	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Di-n-butyl phthalate	ND		0.33	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Di-n-octyl phthalate	ND		0.33	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Fluoranthene	0.47		0.070	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Fluorene	0.029 J		0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Hexachlorobenzene	ND		0.070	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Hexachlorobutadiene	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Hexachlorocyclopentadiene	ND		1.5	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Hexachloroethane	ND		0.23	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Indeno[1,2,3-cd]pyrene	0.12		0.070	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Isophorone	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
N-Nitrosodi-n-propylamine	ND		0.23	0.052	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
N-Nitrosodiphenylamine	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Naphthalene	0.093		0.070	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Nitrobenzene	ND		0.47	0.061	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Pentachlorophenol	ND		0.70	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Phenanthrene	0.26		0.070	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Phenol	ND		0.23	0.037	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
Pyrene	0.41		0.070	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
3 & 4 Methylphenol	ND		1.9	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4
2-Butoxyethanol	2.9		0.33	0.31	mg/Kg	☼	03/28/23 10:04	03/30/23 13:08	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		46 - 137	03/28/23 10:04	03/30/23 13:08	4
Phenol-d5 (Surr)	62		26 - 120	03/28/23 10:04	03/30/23 13:08	4
Nitrobenzene-d5 (Surr)	42		25 - 120	03/28/23 10:04	03/30/23 13:08	4
2-Fluorophenol (Surr)	49		20 - 120	03/28/23 10:04	03/30/23 13:08	4
2-Fluorobiphenyl (Surr)	71		34 - 120	03/28/23 10:04	03/30/23 13:08	4
2,4,6-Tribromophenol (Surr)	85		10 - 120	03/28/23 10:04	03/30/23 13:08	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0092 J		0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:17	1
Barium	0.34 J B		0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:17	1
Cadmium	0.0038 J		0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:17	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:17	1
Lead	0.0059 J		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:17	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:17	1
Silver	0.0023 J B		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:17	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:16	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 85.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.7		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	14.3		0.1	0.1	%			03/28/23 14:26	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.24	0.074	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,1,2,2-Tetrachloroethane	ND		0.24	0.14	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.24	0.064	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,1,2-Trichloroethane	ND		0.24	0.054	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,1-Dichloroethane	ND		0.24	0.046	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,1-Dichloroethene	ND		0.24	0.078	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,2,4-Trichlorobenzene	ND		0.24	0.13	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,2-Dibromo-3-Chloropropane	ND		0.48	0.21	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Ethylene Dibromide	ND		0.24	0.075	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,2-Dichlorobenzene	ND		0.24	0.11	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,2-Dichloroethane	ND		0.24	0.045	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,2-Dichloropropane	ND		0.24	0.035	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,3-Dichlorobenzene	ND		0.24	0.044	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
1,4-Dichlorobenzene	ND		0.24	0.052	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
2-Butanone (MEK)	ND		0.95	0.15	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
2-Hexanone	ND		0.95	0.25	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
4-Methyl-2-pentanone (MIBK)	ND		0.95	0.23	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Acetone	ND		0.95	0.23	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Benzene	0.049	J	0.24	0.040	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Dichlorobromomethane	ND		0.24	0.058	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Bromoform	ND		0.24	0.22	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Bromomethane	ND		0.24	0.16	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Carbon disulfide	ND		0.24	0.10	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Carbon tetrachloride	ND		0.24	0.097	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Chlorobenzene	ND		0.24	0.033	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Chloroethane	ND		0.24	0.14	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Chloroform	ND		0.24	0.051	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Chloromethane	ND		0.24	0.063	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
cis-1,2-Dichloroethene	ND		0.24	0.038	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
cis-1,3-Dichloropropene	ND		0.24	0.12	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Cyclohexane	ND		0.48	0.16	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Chlorodibromomethane	ND		0.24	0.11	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Dichlorodifluoromethane	ND		0.24	0.050	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Ethylbenzene	ND		0.24	0.045	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Isopropylbenzene	ND		0.24	0.036	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Methyl acetate	ND		1.2	0.16	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Methyl tert-butyl ether	ND		0.24	0.035	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Methylcyclohexane	0.34	J	0.48	0.063	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Methylene Chloride	ND		0.48	0.36	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Styrene	ND		0.24	0.049	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Tetrachloroethene	ND		0.24	0.092	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Toluene	ND		0.24	0.23	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
trans-1,2-Dichloroethene	ND		0.24	0.059	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
trans-1,3-Dichloropropene	ND		0.24	0.10	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Trichloroethene	ND		0.24	0.14	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Trichlorofluoromethane	ND		0.24	0.13	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Vinyl chloride	0.15	J	0.24	0.12	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Xylenes, Total	0.13	J	0.48	0.087	mg/Kg	✱	03/27/23 18:16	03/29/23 08:39	1
Butyl acrylate	320		48	26	mg/Kg	✱	03/27/23 18:16	03/28/23 10:46	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	3.4		0.48	0.11	mg/Kg	☼	03/27/23 18:16	03/29/23 08:39	1
2-Ethylhexyl acrylate	ND		2.4	1.8	mg/Kg	☼	03/27/23 18:16	03/29/23 08:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	81		56 - 125				03/27/23 18:16	03/28/23 10:46	20
Toluene-d8 (Surr)	123		56 - 125				03/27/23 18:16	03/29/23 08:39	1
Dibromofluoromethane (Surr)	79		41 - 138				03/27/23 18:16	03/28/23 10:46	20
Dibromofluoromethane (Surr)	96		41 - 138				03/27/23 18:16	03/29/23 08:39	1
4-Bromofluorobenzene (Surr)	80		41 - 143				03/27/23 18:16	03/28/23 10:46	20
4-Bromofluorobenzene (Surr)	123		41 - 143				03/27/23 18:16	03/29/23 08:39	1
1,2-Dichloroethane-d4 (Surr)	85		58 - 125				03/27/23 18:16	03/28/23 10:46	20
1,2-Dichloroethane-d4 (Surr)	116		58 - 125				03/27/23 18:16	03/29/23 08:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.30	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
bis (2-chloroisopropyl) ether	ND		0.59	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4,5-Trichlorophenol	ND		0.89	0.41	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4,6-Trichlorophenol	ND		0.89	0.38	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4-Dichlorophenol	ND		0.89	0.26	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4-Dimethylphenol	ND		0.89	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4-Dinitrophenol	ND		2.0	0.84	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,4-Dinitrotoluene	ND		1.2	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2,6-Dinitrotoluene	ND		1.2	0.33	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Chloronaphthalene	ND		0.30	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Chlorophenol	ND		0.30	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Methylnaphthalene	0.29		0.089	0.012	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Methylphenol	ND		1.2	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Nitroaniline	ND		1.2	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Nitrophenol	ND		0.30	0.077	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
3,3'-Dichlorobenzidine	ND		0.59	0.25	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
3-Nitroaniline	ND		1.2	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4,6-Dinitro-2-methylphenol	ND		2.0	0.47	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Bromophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Chloro-3-methylphenol	ND		0.89	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Chloroaniline	ND		0.89	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Chlorophenyl phenyl ether	ND		0.30	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Nitroaniline	ND		1.2	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
4-Nitrophenol	ND		2.0	0.56	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Acenaphthene	0.027	J	0.089	0.017	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Acenaphthylene	ND		0.089	0.024	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Acetophenone	ND		0.59	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Anthracene	0.038	J	0.089	0.014	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Atrazine	ND		1.2	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzaldehyde	0.14	J	0.59	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzo[a]anthracene	0.12		0.089	0.020	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzo[a]pyrene	0.098		0.089	0.055	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzo[b]fluoranthene	0.17		0.089	0.038	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzo[g,h,i]perylene	0.081	J	0.089	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Benzo[k]fluoranthene	0.071	J	0.089	0.041	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.59	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Bis(2-chloroethyl)ether	ND		0.59	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Bis(2-ethylhexyl) phthalate	ND		0.41	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Butyl benzyl phthalate	ND		0.41	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Caprolactam	ND		2.0	0.44	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Carbazole	ND		0.30	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Chrysene	0.14		0.089	0.0088	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Dibenz(a,h)anthracene	0.051 J		0.089	0.041	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Dibenzofuran	0.11 J		0.30	0.077	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Diethyl phthalate	ND		0.41	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Dimethyl phthalate	ND		0.41	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Di-n-butyl phthalate	ND		0.41	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Di-n-octyl phthalate	ND		0.41	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Fluoranthene	0.26		0.089	0.026	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Fluorene	0.030 J		0.089	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Hexachlorobenzene	ND		0.089	0.017	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Hexachlorobutadiene	ND		0.30	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Hexachlorocyclopentadiene	ND		2.0	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Hexachloroethane	ND		0.30	0.053	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Indeno[1,2,3-cd]pyrene	0.086 J		0.089	0.044	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Isophorone	ND		0.30	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
N-Nitrosodi-n-propylamine	ND		0.30	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
N-Nitrosodiphenylamine	ND		0.30	0.071	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Naphthalene	0.18		0.089	0.014	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Nitrobenzene	ND		0.59	0.077	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Pentachlorophenol	ND		0.89	0.34	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Phenanthrene	0.25		0.089	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Phenol	ND		0.30	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
Pyrene	0.24		0.089	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
3 & 4 Methylphenol	ND		2.4	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5
2-Butoxyethanol	4.7		0.41	0.39	mg/Kg	☼	03/28/23 10:04	03/30/23 12:00	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	99		46 - 137	03/28/23 10:04	03/30/23 12:00	5
Phenol-d5 (Surr)	77		26 - 120	03/28/23 10:04	03/30/23 12:00	5
Nitrobenzene-d5 (Surr)	54		25 - 120	03/28/23 10:04	03/30/23 12:00	5
2-Fluorophenol (Surr)	66		20 - 120	03/28/23 10:04	03/30/23 12:00	5
2-Fluorobiphenyl (Surr)	83		34 - 120	03/28/23 10:04	03/30/23 12:00	5
2,4,6-Tribromophenol (Surr)	109		10 - 120	03/28/23 10:04	03/30/23 12:00	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012 J		0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:21	1
Barium	0.21 J B		0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:21	1
Cadmium	0.0022 J		0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:21	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:21	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:21	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:21	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:21	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.6

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.6		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	15.4		0.1	0.1	%			03/28/23 14:26	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.22	0.070	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,1,2,2-Tetrachloroethane	ND		0.22	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.22	0.060	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,1,2-Trichloroethane	ND		0.22	0.051	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,1-Dichloroethane	ND		0.22	0.043	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,1-Dichloroethene	ND		0.22	0.073	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,2,4-Trichlorobenzene	ND		0.22	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,2-Dibromo-3-Chloropropane	ND		0.45	0.20	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Ethylene Dibromide	ND		0.22	0.070	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,2-Dichlorobenzene	ND		0.22	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,2-Dichloroethane	ND		0.22	0.042	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,2-Dichloropropane	ND		0.22	0.033	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,3-Dichlorobenzene	ND		0.22	0.041	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
1,4-Dichlorobenzene	ND		0.22	0.049	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
2-Butanone (MEK)	ND		0.89	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
2-Hexanone	ND		0.89	0.23	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
4-Methyl-2-pentanone (MIBK)	ND		0.89	0.21	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Acetone	ND		0.89	0.22	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Benzene	ND		0.22	0.037	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Dichlorobromomethane	ND		0.22	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Bromoform	ND		0.22	0.20	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Bromomethane	ND		0.22	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Carbon disulfide	ND		0.22	0.096	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Carbon tetrachloride	ND		0.22	0.091	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Chlorobenzene	ND		0.22	0.031	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Chloroethane	ND		0.22	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Chloroform	ND		0.22	0.048	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Chloromethane	ND		0.22	0.059	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
cis-1,2-Dichloroethene	ND		0.22	0.036	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
cis-1,3-Dichloropropene	ND		0.22	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Cyclohexane	ND		0.45	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Chlorodibromomethane	ND		0.22	0.10	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Dichlorodifluoromethane	ND		0.22	0.047	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Ethylbenzene	ND		0.22	0.042	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Isopropylbenzene	ND		0.22	0.034	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Methyl acetate	ND		1.1	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Methyl tert-butyl ether	ND		0.22	0.033	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Methylcyclohexane	ND		0.45	0.059	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Methylene Chloride	ND		0.45	0.34	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Styrene	ND		0.22	0.046	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Tetrachloroethene	ND		0.22	0.086	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Toluene	ND		0.22	0.21	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
trans-1,2-Dichloroethene	ND		0.22	0.055	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
trans-1,3-Dichloropropene	ND		0.22	0.094	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Trichloroethene	ND		0.22	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Trichlorofluoromethane	ND		0.22	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Vinyl chloride	ND		0.22	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Xylenes, Total	ND		0.45	0.081	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Butyl acrylate	ND		2.2	1.2	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.45	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
2-Ethylhexyl acrylate	ND		2.2	1.7	mg/Kg	✱	03/27/23 18:16	03/28/23 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125				03/27/23 18:16	03/28/23 12:33	1
Dibromofluoromethane (Surr)	71		41 - 138				03/27/23 18:16	03/28/23 12:33	1
4-Bromofluorobenzene (Surr)	72		41 - 143				03/27/23 18:16	03/28/23 12:33	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				03/27/23 18:16	03/28/23 12:33	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.23	0.079	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
bis (2-chloroisopropyl) ether	ND		0.46	0.046	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4,5-Trichlorophenol	ND		0.69	0.32	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4,6-Trichlorophenol	ND		0.69	0.30	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4-Dichlorophenol	ND		0.69	0.20	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4-Dimethylphenol	ND		0.69	0.19	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4-Dinitrophenol	ND		1.5	0.66	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,4-Dinitrotoluene	ND		0.93	0.29	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2,6-Dinitrotoluene	ND		0.93	0.26	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Chloronaphthalene	ND		0.23	0.065	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Chlorophenol	ND		0.23	0.046	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Methylnaphthalene	0.16		0.069	0.0091	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Methylphenol	ND		0.93	0.14	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Nitroaniline	ND		0.93	0.19	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
2-Nitrophenol	ND		0.23	0.060	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
3,3'-Dichlorobenzidine	ND		0.46	0.20	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
3-Nitroaniline	ND		0.93	0.23	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4,6-Dinitro-2-methylphenol	ND		1.5	0.37	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Bromophenyl phenyl ether	ND		0.23	0.065	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Chloro-3-methylphenol	ND		0.69	0.21	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Chloroaniline	ND		0.69	0.14	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Chlorophenyl phenyl ether	ND		0.23	0.065	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Nitroaniline	ND		0.93	0.28	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
4-Nitrophenol	ND		1.5	0.43	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Acenaphthene	0.020	J	0.069	0.013	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Acenaphthylene	ND		0.069	0.019	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Acetophenone	ND		0.46	0.051	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Anthracene	0.051	J	0.069	0.011	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Atrazine	ND		0.93	0.17	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzaldehyde	ND		0.46	0.11	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzo[a]anthracene	0.17		0.069	0.016	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzo[a]pyrene	0.16		0.069	0.043	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzo[b]fluoranthene	0.21		0.069	0.030	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzo[g,h,i]perylene	0.092		0.069	0.033	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Benzo[k]fluoranthene	0.073		0.069	0.032	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Bis(2-chloroethoxy)methane	ND		0.46	0.056	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Bis(2-chloroethyl)ether	ND		0.46	0.056	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Bis(2-ethylhexyl) phthalate	ND		0.32	0.24	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4
Butyl benzyl phthalate	ND		0.32	0.10	mg/Kg	✱	03/28/23 10:04	03/30/23 13:31	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		1.5	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Carbazole	ND		0.23	0.088	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Chrysene	0.21		0.069	0.0069	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Dibenz(a,h)anthracene	0.047 J		0.069	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Dibenzofuran	0.069 J		0.23	0.060	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Diethyl phthalate	ND		0.32	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Dimethyl phthalate	ND		0.32	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Di-n-butyl phthalate	ND		0.32	0.23	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Di-n-octyl phthalate	ND		0.32	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Fluoranthene	0.37		0.069	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Fluorene	0.028 J		0.069	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Hexachlorobenzene	ND		0.069	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Hexachlorobutadiene	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Hexachlorocyclopentadiene	ND		1.5	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Hexachloroethane	ND		0.23	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Indeno[1,2,3-cd]pyrene	0.090		0.069	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Isophorone	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
N-Nitrosodi-n-propylamine	ND		0.23	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
N-Nitrosodiphenylamine	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Naphthalene	0.11		0.069	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Nitrobenzene	ND		0.46	0.060	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Pentachlorophenol	ND		0.69	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Phenanthrene	0.24		0.069	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Phenol	ND		0.23	0.037	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
Pyrene	0.32		0.069	0.0099	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
3 & 4 Methylphenol	ND		1.9	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4
2-Butoxyethanol	2.8		0.32	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 13:31	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	90		46 - 137	03/28/23 10:04	03/30/23 13:31	4
Phenol-d5 (Surr)	70		26 - 120	03/28/23 10:04	03/30/23 13:31	4
Nitrobenzene-d5 (Surr)	54		25 - 120	03/28/23 10:04	03/30/23 13:31	4
2-Fluorophenol (Surr)	60		20 - 120	03/28/23 10:04	03/30/23 13:31	4
2-Fluorobiphenyl (Surr)	79		34 - 120	03/28/23 10:04	03/30/23 13:31	4
2,4,6-Tribromophenol (Surr)	80		10 - 120	03/28/23 10:04	03/30/23 13:31	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012 J		0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:26	1
Barium	0.53 B		0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:26	1
Cadmium	0.0030 J		0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:26	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:26	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:26	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:26	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:26	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:20	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.4		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	13.6		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.28	0.087	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.28	0.17	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.28	0.075	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,1,2-Trichloroethane	ND		0.28	0.064	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,1-Dichloroethane	ND		0.28	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,1-Dichloroethene	ND		0.28	0.092	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,2,4-Trichlorobenzene	ND		0.28	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		0.56	0.25	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Ethylene Dibromide	ND		0.28	0.088	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,2-Dichlorobenzene	ND		0.28	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,2-Dichloroethane	ND		0.28	0.053	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,2-Dichloropropane	ND		0.28	0.041	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,3-Dichlorobenzene	ND		0.28	0.052	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
1,4-Dichlorobenzene	ND		0.28	0.062	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
2-Butanone (MEK)	ND		1.1	0.18	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
2-Hexanone	ND		1.1	0.29	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		1.1	0.27	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Acetone	ND		1.1	0.27	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Benzene	0.18	J	0.28	0.047	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Dichlorobromomethane	ND		0.28	0.068	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Bromoform	ND		0.28	0.26	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Bromomethane	ND		0.28	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Carbon disulfide	ND		0.28	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Carbon tetrachloride	ND		0.28	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Chlorobenzene	ND		0.28	0.039	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Chloroethane	ND		0.28	0.17	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Chloroform	ND		0.28	0.060	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Chloromethane	ND		0.28	0.074	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
cis-1,2-Dichloroethene	ND		0.28	0.045	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
cis-1,3-Dichloropropene	ND		0.28	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Cyclohexane	ND		0.56	0.18	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Chlorodibromomethane	ND		0.28	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Dichlorodifluoromethane	ND		0.28	0.059	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Ethylbenzene	ND		0.28	0.053	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Isopropylbenzene	ND		0.28	0.043	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Methyl acetate	1.1	J	1.4	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Methyl tert-butyl ether	ND		0.28	0.041	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Methylcyclohexane	ND		0.56	0.074	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Methylene Chloride	ND		0.56	0.43	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Styrene	ND		0.28	0.058	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Tetrachloroethene	ND		0.28	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Toluene	ND		0.28	0.27	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
trans-1,2-Dichloroethene	ND		0.28	0.069	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
trans-1,3-Dichloropropene	ND		0.28	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Trichloroethene	ND		0.28	0.16	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Trichlorofluoromethane	ND		0.28	0.15	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Vinyl chloride	ND		0.28	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Xylenes, Total	ND		0.56	0.10	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1
Butyl acrylate	ND		2.8	1.5	mg/Kg	✱	03/27/23 18:16	03/28/23 12:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.56	0.13	mg/Kg	☼	03/27/23 18:16	03/28/23 12:54	1
2-Ethylhexyl acrylate	ND		2.8	2.1	mg/Kg	☼	03/27/23 18:16	03/28/23 12:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	84		56 - 125				03/27/23 18:16	03/28/23 12:54	1
Dibromofluoromethane (Surr)	76		41 - 138				03/27/23 18:16	03/28/23 12:54	1
4-Bromofluorobenzene (Surr)	86		41 - 143				03/27/23 18:16	03/28/23 12:54	1
1,2-Dichloroethane-d4 (Surr)	83		58 - 125				03/27/23 18:16	03/28/23 12:54	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		3.0	1.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
bis (2-chloroisopropyl) ether	ND		6.1	0.61	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4,5-Trichlorophenol	ND		9.1	4.2	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4,6-Trichlorophenol	ND		9.1	3.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4-Dichlorophenol	ND		9.1	2.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4-Dimethylphenol	ND		9.1	2.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4-Dinitrophenol	ND		20	8.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,4-Dinitrotoluene	ND		12	3.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2,6-Dinitrotoluene	ND		12	3.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Chloronaphthalene	ND		3.0	0.85	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Chlorophenol	ND		3.0	0.61	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Methylnaphthalene	0.31	J	0.91	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Methylphenol	ND		12	1.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Nitroaniline	ND		12	2.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Nitrophenol	ND		3.0	0.79	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
3,3'-Dichlorobenzidine	ND		6.1	2.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
3-Nitroaniline	ND		12	3.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4,6-Dinitro-2-methylphenol	ND		20	4.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Bromophenyl phenyl ether	ND		3.0	0.85	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Chloro-3-methylphenol	ND		9.1	2.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Chloroaniline	ND		9.1	1.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Chlorophenyl phenyl ether	ND		3.0	0.85	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Nitroaniline	ND		12	3.6	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
4-Nitrophenol	ND		20	5.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Acenaphthene	ND		0.91	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Acenaphthylene	ND		0.91	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Acetophenone	ND		6.1	0.67	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Anthracene	ND		0.91	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Atrazine	ND		12	2.2	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzaldehyde	ND		6.1	1.4	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzo[a]anthracene	ND		0.91	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzo[a]pyrene	ND		0.91	0.57	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzo[b]fluoranthene	0.47	J	0.91	0.39	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzo[g,h,i]perylene	ND		0.91	0.43	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Benzo[k]fluoranthene	ND		0.91	0.42	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Bis(2-chloroethoxy)methane	ND		6.1	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Bis(2-chloroethyl)ether	ND		6.1	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Bis(2-ethylhexyl) phthalate	ND		4.2	3.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Butyl benzyl phthalate	ND		4.2	1.3	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.0

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		20	4.5	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Carbazole	ND		3.0	1.2	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Chrysene	ND		0.91	0.090	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Dibenz(a,h)anthracene	ND		0.91	0.42	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Dibenzofuran	ND		3.0	0.79	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Diethyl phthalate	ND		4.2	1.9	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Dimethyl phthalate	ND		4.2	0.85	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Di-n-butyl phthalate	ND		4.2	3.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Di-n-octyl phthalate	ND		4.2	1.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Fluoranthene	0.27	J	0.91	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Fluorene	ND		0.91	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Hexachlorobenzene	ND		0.91	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Hexachlorobutadiene	ND		3.0	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Hexachlorocyclopentadiene	ND		20	3.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Hexachloroethane	ND		3.0	0.55	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Indeno[1,2,3-cd]pyrene	ND		0.91	0.45	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Isophorone	ND		3.0	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
N-Nitrosodi-n-propylamine	ND		3.0	0.67	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
N-Nitrosodiphenylamine	ND		3.0	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Naphthalene	0.21	J	0.91	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Nitrobenzene	ND		6.1	0.79	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Pentachlorophenol	ND		9.1	3.5	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Phenanthrene	0.36	J	0.91	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Phenol	ND		3.0	0.48	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
Pyrene	0.26	J	0.91	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
3 & 4 Methylphenol	ND		24	1.8	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50
2-Butoxyethanol	52		4.2	4.0	mg/Kg	☼	03/28/23 10:04	03/30/23 10:29	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	98		46 - 137	03/28/23 10:04	03/30/23 10:29	50
Phenol-d5 (Surr)	84		26 - 120	03/28/23 10:04	03/30/23 10:29	50
Nitrobenzene-d5 (Surr)	51		25 - 120	03/28/23 10:04	03/30/23 10:29	50
2-Fluorophenol (Surr)	67		20 - 120	03/28/23 10:04	03/30/23 10:29	50
2-Fluorobiphenyl (Surr)	79		34 - 120	03/28/23 10:04	03/30/23 10:29	50
2,4,6-Tribromophenol (Surr)	87		10 - 120	03/28/23 10:04	03/30/23 10:29	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0082	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:31	1
Barium	0.56	B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:31	1
Cadmium	0.0044	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:31	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:31	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:31	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:31	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:31	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:22	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	83.0		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	17.0		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0040	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.0040	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0040	0.0010	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,1,2-Trichloroethane	ND		0.0040	0.00090	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,1-Dichloroethane	ND		0.0040	0.00055	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,1-Dichloroethene	ND		0.0040	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,2,4-Trichlorobenzene	ND		0.0040	0.0020	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		0.0080	0.0029	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Ethylene Dibromide	ND		0.0040	0.00061	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,2-Dichlorobenzene	ND		0.0040	0.00089	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,2-Dichloroethane	ND		0.0040	0.00062	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,2-Dichloropropane	ND		0.0040	0.00068	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,3-Dichlorobenzene	ND		0.0040	0.00065	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
1,4-Dichlorobenzene	ND		0.0040	0.00070	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
2-Butanone (MEK)	0.0063	J	0.016	0.0028	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
2-Hexanone	ND		0.016	0.0033	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.016	0.0030	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Acetone	0.018	J B **	0.020	0.017	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Benzene	ND		0.0040	0.00056	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Dichlorobromomethane	ND		0.0040	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Bromoform	ND		0.0040	0.0019	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Bromomethane	ND		0.0040	0.0033	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Carbon disulfide	ND		0.0040	0.00093	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Carbon tetrachloride	ND		0.0040	0.0026	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Chlorobenzene	ND		0.0040	0.00073	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Chloroethane	ND		0.0040	0.0022	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Chloroform	ND		0.0040	0.00063	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Chloromethane	ND		0.0040	0.0018	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
cis-1,2-Dichloroethene	ND		0.0040	0.0012	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
cis-1,3-Dichloropropene	ND		0.0040	0.0023	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Cyclohexane	ND		0.0080	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Chlorodibromomethane	ND		0.0040	0.0022	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Dichlorodifluoromethane	ND		0.0040	0.00075	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Ethylbenzene	ND		0.0040	0.00084	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Isopropylbenzene	ND		0.0040	0.0015	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Methyl acetate	ND		0.020	0.0027	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Methyl tert-butyl ether	ND		0.0040	0.0016	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Methylcyclohexane	ND		0.0080	0.00098	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Methylene Chloride	ND		0.020	0.0096	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Styrene	ND		0.0040	0.00092	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Tetrachloroethene	ND		0.0040	0.00058	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Toluene	ND		0.0040	0.00062	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
trans-1,2-Dichloroethene	ND		0.0040	0.0011	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
trans-1,3-Dichloropropene	ND		0.0040	0.0030	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Trichloroethene	ND		0.0040	0.00050	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Trichlorofluoromethane	ND		0.0040	0.0021	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Vinyl chloride	0.24	E	0.0040	0.0014	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1
Vinyl chloride	ND		0.21	0.11	mg/Kg	✱	03/27/23 18:16	03/30/23 17:21	1
Xylenes, Total	ND		0.0080	0.0013	mg/Kg	✱	03/26/23 12:51	03/29/23 12:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl acrylate	17	E	0.040	0.015	mg/Kg	☼	03/26/23 12:51	03/29/23 12:54	1
Butyl acrylate	ND		2.1	1.2	mg/Kg	☼	03/27/23 18:16	03/30/23 17:21	1
Methyl acrylate	0.066		0.0080	0.0025	mg/Kg	☼	03/26/23 12:51	03/29/23 12:54	1
2-Ethylhexyl acrylate	ND		0.040	0.019	mg/Kg	☼	03/26/23 12:51	03/29/23 12:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	77		56 - 125				03/26/23 12:51	03/29/23 12:54	1
Toluene-d8 (Surr)	77		56 - 125				03/27/23 18:16	03/30/23 17:21	1
Dibromofluoromethane (Surr)	87		41 - 138				03/26/23 12:51	03/29/23 12:54	1
Dibromofluoromethane (Surr)	79		41 - 138				03/27/23 18:16	03/30/23 17:21	1
4-Bromofluorobenzene (Surr)	79		41 - 143				03/26/23 12:51	03/29/23 12:54	1
4-Bromofluorobenzene (Surr)	65		41 - 143				03/27/23 18:16	03/30/23 17:21	1
1,2-Dichloroethane-d4 (Surr)	88		58 - 125				03/26/23 12:51	03/29/23 12:54	1
1,2-Dichloroethane-d4 (Surr)	75		58 - 125				03/27/23 18:16	03/30/23 17:21	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.23	0.079	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
bis (2-chloroisopropyl) ether	ND		0.46	0.046	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4,5-Trichlorophenol	ND		0.69	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4,6-Trichlorophenol	ND		0.69	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4-Dichlorophenol	ND		0.69	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4-Dimethylphenol	ND		0.69	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4-Dinitrophenol	ND		1.5	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,4-Dinitrotoluene	ND		0.93	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2,6-Dinitrotoluene	ND		0.93	0.26	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Chloronaphthalene	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Chlorophenol	ND		0.23	0.046	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Methylnaphthalene	0.096		0.069	0.0091	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Methylphenol	ND		0.93	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Nitroaniline	ND		0.93	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Nitrophenol	ND		0.23	0.060	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
3,3'-Dichlorobenzidine	ND		0.46	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
3-Nitroaniline	ND		0.93	0.23	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4,6-Dinitro-2-methylphenol	ND		1.5	0.37	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Bromophenyl phenyl ether	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Chloro-3-methylphenol	ND		0.69	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Chloroaniline	ND		0.69	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Chlorophenyl phenyl ether	ND		0.23	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Nitroaniline	ND		0.93	0.28	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
4-Nitrophenol	ND		1.5	0.43	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Acenaphthene	ND		0.069	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Acenaphthylene	0.11		0.069	0.019	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Acetophenone	ND		0.46	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Anthracene	0.025	J	0.069	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Atrazine	ND		0.93	0.17	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Benzaldehyde	ND		0.46	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Benzo[a]anthracene	0.14		0.069	0.016	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Benzo[a]pyrene	0.36		0.069	0.043	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Benzo[b]fluoranthene	0.36		0.069	0.030	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.7

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	0.19		0.069	0.033	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Benzo[k]fluoranthene	0.15		0.069	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Bis(2-chloroethoxy)methane	ND		0.46	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Bis(2-chloroethyl)ether	ND		0.46	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Bis(2-ethylhexyl) phthalate	ND		0.32	0.24	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Butyl benzyl phthalate	ND		0.32	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Caprolactam	ND		1.5	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Carbazole	ND		0.23	0.088	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Chrysene	0.18		0.069	0.0069	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Dibenz(a,h)anthracene	0.071		0.069	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Dibenzofuran	ND		0.23	0.060	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Diethyl phthalate	ND		0.32	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Dimethyl phthalate	ND		0.32	0.065	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Di-n-butyl phthalate	ND		0.32	0.23	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Di-n-octyl phthalate	ND		0.32	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Fluoranthene	0.16		0.069	0.021	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Fluorene	ND		0.069	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Hexachlorobenzene	ND		0.069	0.013	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Hexachlorobutadiene	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Hexachlorocyclopentadiene	ND		1.5	0.29	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Hexachloroethane	ND		0.23	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Indeno[1,2,3-cd]pyrene	0.20		0.069	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Isophorone	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
N-Nitrosodi-n-propylamine	ND		0.23	0.051	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
N-Nitrosodiphenylamine	ND		0.23	0.056	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Naphthalene	0.055 J		0.069	0.011	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Nitrobenzene	ND		0.46	0.060	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Pentachlorophenol	ND		0.69	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Phenanthrene	0.11		0.069	0.010	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Phenol	ND		0.23	0.037	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
Pyrene	0.17		0.069	0.0099	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
3 & 4 Methylphenol	ND		1.9	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4
2-Butoxyethanol	3.0		0.32	0.30	mg/Kg	☼	03/28/23 10:04	03/30/23 13:53	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	91		46 - 137	03/28/23 10:04	03/30/23 13:53	4
Phenol-d5 (Surr)	59		26 - 120	03/28/23 10:04	03/30/23 13:53	4
Nitrobenzene-d5 (Surr)	47		25 - 120	03/28/23 10:04	03/30/23 13:53	4
2-Fluorophenol (Surr)	53		20 - 120	03/28/23 10:04	03/30/23 13:53	4
2-Fluorobiphenyl (Surr)	69		34 - 120	03/28/23 10:04	03/30/23 13:53	4
2,4,6-Tribromophenol (Surr)	96		10 - 120	03/28/23 10:04	03/30/23 13:53	4

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.014	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:44	1
Barium	0.11	J B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:44	1
Cadmium	0.0042	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:44	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:44	1
Lead	0.0095	J	0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:44	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:44	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.7

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:44	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.7		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	13.3		0.1	0.1	%			03/28/23 14:26	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.21	0.064	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,1,2,2-Tetrachloroethane	ND		0.21	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.21	0.055	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,1,2-Trichloroethane	ND		0.21	0.047	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,1-Dichloroethane	ND		0.21	0.040	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,1-Dichloroethene	ND		0.21	0.068	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,2,4-Trichlorobenzene	ND		0.21	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,2-Dibromo-3-Chloropropane	ND		0.41	0.18	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Ethylene Dibromide	ND		0.21	0.065	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,2-Dichlorobenzene	ND		0.21	0.099	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,2-Dichloroethane	ND		0.21	0.039	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,2-Dichloropropane	ND		0.21	0.031	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,3-Dichlorobenzene	ND		0.21	0.038	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
1,4-Dichlorobenzene	ND		0.21	0.045	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
2-Butanone (MEK)	ND		0.83	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
2-Hexanone	ND		0.83	0.22	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
4-Methyl-2-pentanone (MIBK)	ND		0.83	0.20	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Acetone	ND		0.83	0.20	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Benzene	0.14	J	0.21	0.035	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Dichlorobromomethane	ND		0.21	0.050	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Bromoform	ND		0.21	0.19	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Bromomethane	ND		0.21	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Carbon disulfide	ND		0.21	0.089	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Carbon tetrachloride	ND		0.21	0.084	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Chlorobenzene	ND		0.21	0.029	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Chloroethane	ND		0.21	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Chloroform	ND		0.21	0.045	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Chloromethane	ND		0.21	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
cis-1,2-Dichloroethene	ND		0.21	0.033	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
cis-1,3-Dichloropropene	ND		0.21	0.10	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Cyclohexane	ND		0.41	0.13	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Chlorodibromomethane	ND		0.21	0.097	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Dichlorodifluoromethane	ND		0.21	0.044	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Ethylbenzene	ND		0.21	0.039	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Isopropylbenzene	ND		0.21	0.031	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Methyl acetate	0.16	J	1.0	0.14	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Methyl tert-butyl ether	ND		0.21	0.031	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Methylcyclohexane	0.19	J	0.41	0.054	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Methylene Chloride	ND		0.41	0.32	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Styrene	ND		0.21	0.043	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Tetrachloroethene	ND		0.21	0.080	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Toluene	ND		0.21	0.20	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
trans-1,2-Dichloroethene	ND		0.21	0.051	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
trans-1,3-Dichloropropene	ND		0.21	0.087	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Trichloroethene	ND		0.21	0.12	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Trichlorofluoromethane	ND		0.21	0.11	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Vinyl chloride	ND		0.21	0.10	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Xylenes, Total	0.11	J	0.41	0.075	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1
Butyl acrylate	8.6		2.1	1.1	mg/Kg	✱	03/27/23 18:16	03/28/23 11:08	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.41	0.097	mg/Kg	☼	03/27/23 18:16	03/28/23 11:08	1
2-Ethylhexyl acrylate	ND		2.1	1.5	mg/Kg	☼	03/27/23 18:16	03/28/23 11:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	80		56 - 125				03/27/23 18:16	03/28/23 11:08	1
Dibromofluoromethane (Surr)	75		41 - 138				03/27/23 18:16	03/28/23 11:08	1
4-Bromofluorobenzene (Surr)	80		41 - 143				03/27/23 18:16	03/28/23 11:08	1
1,2-Dichloroethane-d4 (Surr)	81		58 - 125				03/27/23 18:16	03/28/23 11:08	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.31	J	0.59	0.20	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
bis (2-chloroisopropyl) ether	ND		1.2	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4,5-Trichlorophenol	ND		1.8	0.81	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4,6-Trichlorophenol	ND	F1	1.8	0.75	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4-Dichlorophenol	ND		1.8	0.52	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4-Dimethylphenol	ND		1.8	0.47	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4-Dinitrophenol	ND		3.9	1.7	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,4-Dinitrotoluene	ND		2.3	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2,6-Dinitrotoluene	ND		2.3	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Chloronaphthalene	ND		0.59	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Chlorophenol	ND		0.59	0.12	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Methylnaphthalene	1.4	F1	0.18	0.023	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Methylphenol	ND		2.3	0.36	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Nitroaniline	ND		2.3	0.47	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Nitrophenol	ND		0.59	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
3,3'-Dichlorobenzidine	ND		1.2	0.50	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
3-Nitroaniline	ND		2.3	0.58	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4,6-Dinitro-2-methylphenol	ND		3.9	0.94	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Bromophenyl phenyl ether	ND		0.59	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Chloro-3-methylphenol	ND		1.8	0.53	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Chloroaniline	ND	F1	1.8	0.35	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Chlorophenyl phenyl ether	ND		0.59	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Nitroaniline	ND		2.3	0.70	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
4-Nitrophenol	ND		3.9	1.1	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Acenaphthene	0.23		0.18	0.034	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Acenaphthylene	0.078	J	0.18	0.047	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Acetophenone	ND		1.2	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Anthracene	0.32		0.18	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Atrazine	ND		2.3	0.42	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzaldehyde	ND		1.2	0.27	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzo[a]anthracene	2.8	F1	0.18	0.040	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzo[a]pyrene	2.2	F1	0.18	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzo[b]fluoranthene	2.3	F1	0.18	0.076	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzo[g,h,i]perylene	1.3	F1	0.18	0.083	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Benzo[k]fluoranthene	1.0	F1	0.18	0.081	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Bis(2-chloroethoxy)methane	ND		1.2	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Bis(2-chloroethyl)ether	ND		1.2	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Bis(2-ethylhexyl) phthalate	ND		0.82	0.60	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Butyl benzyl phthalate	ND		0.82	0.26	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		3.9	0.88	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Carbazole	0.25	J	0.59	0.22	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Chrysene	3.0	F1	0.18	0.017	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Dibenz(a,h)anthracene	0.34		0.18	0.081	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Dibenzofuran	1.0		0.59	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Diethyl phthalate	ND		0.82	0.36	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Dimethyl phthalate	ND		0.82	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Di-n-butyl phthalate	ND		0.82	0.59	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Di-n-octyl phthalate	ND		0.82	0.33	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Fluoranthene	5.2		0.18	0.052	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Fluorene	0.18		0.18	0.032	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Hexachlorobenzene	ND		0.18	0.033	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Hexachlorobutadiene	ND		0.59	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Hexachlorocyclopentadiene	ND	F1	3.9	0.73	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Hexachloroethane	ND		0.59	0.11	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Indeno[1,2,3-cd]pyrene	1.1	F1	0.18	0.086	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Isophorone	ND		0.59	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
N-Nitrosodi-n-propylamine	ND		0.59	0.13	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
N-Nitrosodiphenylamine	ND		0.59	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Naphthalene	1.1		0.18	0.028	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Nitrobenzene	ND		1.2	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Pentachlorophenol	ND		1.8	0.68	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Phenanthrene	2.3	F1	0.18	0.026	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Phenol	ND		0.59	0.094	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
Pyrene	4.6		0.18	0.025	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
3 & 4 Methylphenol	ND		4.7	0.34	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10
2-Butoxyethanol	8.5		0.82	0.77	mg/Kg	☼	03/28/23 10:04	03/30/23 10:51	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	81		46 - 137	03/28/23 10:04	03/30/23 10:51	10
Phenol-d5 (Surr)	64		26 - 120	03/28/23 10:04	03/30/23 10:51	10
Nitrobenzene-d5 (Surr)	52		25 - 120	03/28/23 10:04	03/30/23 10:51	10
2-Fluorophenol (Surr)	55		20 - 120	03/28/23 10:04	03/30/23 10:51	10
2-Fluorobiphenyl (Surr)	72		34 - 120	03/28/23 10:04	03/30/23 10:51	10
2,4,6-Tribromophenol (Surr)	89		10 - 120	03/28/23 10:04	03/30/23 10:51	10

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.013	J	0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 15:48	1
Barium	0.35	J B	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 15:48	1
Cadmium	0.0013	J	0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 15:48	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 15:48	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 15:48	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 15:48	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 15:48	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 13:31	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	86.5		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	13.5		0.1	0.1	%			03/28/23 14:26	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/28/23 14:03	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/28/23 14:03	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/28/23 14:03	1
Benzene	ND		0.025	0.00042	mg/L			03/28/23 14:03	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/28/23 14:03	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/28/23 14:03	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/28/23 14:03	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/28/23 14:03	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/28/23 14:03	1
Chloroform	ND		0.025	0.00047	mg/L			03/28/23 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120					03/28/23 14:03	1
Dibromofluoromethane (Surr)	102		71 - 121					03/28/23 14:03	1
4-Bromofluorobenzene (Surr)	94		80 - 120					03/28/23 14:03	1
1,2-Dichloroethane-d4 (Surr)	107		76 - 120					03/28/23 14:03	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/28/23 13:24	03/29/23 15:58	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/28/23 13:24	03/29/23 15:58	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/28/23 13:24	03/29/23 15:58	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/28/23 13:24	03/29/23 15:58	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/28/23 13:24	03/29/23 15:58	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/28/23 13:24	03/29/23 15:58	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/28/23 13:24	03/29/23 15:58	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/28/23 13:24	03/29/23 15:58	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/28/23 13:24	03/29/23 15:58	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/28/23 13:24	03/29/23 15:58	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/28/23 13:24	03/29/23 15:58	1
Pyridine	ND		0.0040	0.00036	mg/L		03/28/23 13:24	03/29/23 15:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		46 - 137				03/28/23 13:24	03/29/23 15:58	1
Phenol-d5 (Surr)	58		26 - 120				03/28/23 13:24	03/29/23 15:58	1
Nitrobenzene-d5 (Surr)	69		24 - 120				03/28/23 13:24	03/29/23 15:58	1
2-Fluorophenol (Surr)	65		19 - 120				03/28/23 13:24	03/29/23 15:58	1
2-Fluorobiphenyl (Surr)	81		33 - 120				03/28/23 13:24	03/29/23 15:58	1
2,4,6-Tribromophenol (Surr)	64		10 - 120				03/28/23 13:24	03/29/23 15:58	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/28/23 13:28	03/29/23 11:12	1
Endrin	ND		0.00050	0.0000065	mg/L		03/28/23 13:28	03/29/23 11:12	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/28/23 13:28	03/29/23 11:12	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/28/23 13:28	03/29/23 11:12	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/28/23 13:28	03/29/23 11:12	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/28/23 13:28	03/29/23 11:12	1
Toxaphene	ND		0.020	0.000058	mg/L		03/28/23 13:28	03/29/23 11:12	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	03/28/23 13:28	03/29/23 11:12	1
DCB Decachlorobiphenyl	75		10 - 145	03/28/23 13:28	03/29/23 11:12	1
Tetrachloro-m-xylene	73		10 - 123	03/28/23 13:28	03/29/23 11:12	1
Tetrachloro-m-xylene	80		10 - 123	03/28/23 13:28	03/29/23 11:12	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		57	29	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1221	ND		57	34	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1232	ND		57	24	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1242	ND		57	22	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1248	ND		57	19	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1254	ND		57	24	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1260	ND		57	24	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1262	ND		57	25	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1
Aroclor-1268	ND		57	18	ug/Kg	✱	03/29/23 09:04	03/29/23 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	81		10 - 149	03/29/23 09:04	03/29/23 15:58	1
DCB Decachlorobiphenyl	78		10 - 174	03/29/23 09:04	03/29/23 15:58	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/29/23 19:00	03/30/23 17:21	1
2,4-D	ND		0.050	0.016	mg/L		03/29/23 19:00	03/30/23 17:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/29/23 19:00	03/30/23 17:21	1
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/29/23 19:00	03/30/23 17:21	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	73	B	5.8	0.043	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,4,6,7,8-HpCDF	220	B	5.8	0.037	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,4,7,8-HxCDD	4.3	J	5.8	0.017	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,4,7,8-HxCDF	60	B	5.8	0.28	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,4,7,8,9-HpCDF	44	B	5.8	0.049	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,6,7,8-HxCDD	7.5		5.8	0.018	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,6,7,8-HxCDF	47		5.8	0.29	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,7,8-PeCDD	4.4	J I B	5.8	0.014	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,7,8-PeCDF	20		5.8	0.29	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,7,8,9-HxCDD	5.9	B	5.8	0.017	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
1,2,3,7,8,9-HxCDF	14	B	5.8	0.35	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
2,3,4,6,7,8-HxCDF	27	B	5.8	0.31	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
2,3,4,7,8-PeCDF	23	B	5.8	0.22	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
2,3,7,8-TCDD	0.90	J B	1.2	0.0097	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
2,3,7,8-TCDF	6.9		1.2	0.14	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
OCDD	290	B	12	0.041	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
OCDF	380	B	12	0.036	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
Total HxCDD	80	B	5.8	0.017	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1
Total HxCDF	320	I B	5.8	0.31	ng/Kg	✱	04/03/23 12:06	04/05/23 03:25	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.5

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	150	B	5.8	0.043	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1
Total HpCDF	360	B	5.8	0.043	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1
Total PeCDD	43	IB	5.8	0.014	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1
Total PeCDF	260	IB	5.8	0.25	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1
Total TCDD	20	IB	1.2	0.0097	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1
Total TCDF	170	IB	1.2	0.14	ng/Kg	☼	04/03/23 12:06	04/05/23 03:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	75		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-OCDD	74		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-2,3,7,8-TCDF	83		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-2,3,7,8-TCDD	76		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-2,3,4,7,8-PeCDF	77		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-2,3,4,6,7,8-HxCDF	73		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,7,8,9-HxCDF	71		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,7,8,9-HxCDD	71		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,7,8-PeCDF	75		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,7,8-PeCDD	70		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,6,7,8-HxCDF	83		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,6,7,8-HxCDD	71		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,4,7,8,9-HpCDF	73		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,4,7,8-HxCDF	88		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,4,7,8-HxCDD	70		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,4,6,7,8-HpCDF	72		40 - 135	04/03/23 12:06	04/05/23 03:25	1
13C-1,2,3,4,6,7,8-HpCDD	71		40 - 135	04/03/23 12:06	04/05/23 03:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.5		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	15.5		0.1	0.1	%			03/28/23 14:26	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/28/23 14:26	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/28/23 14:26	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/28/23 14:26	1
Benzene	ND		0.025	0.00042	mg/L			03/28/23 14:26	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/28/23 14:26	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/28/23 14:26	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/28/23 14:26	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/28/23 14:26	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/28/23 14:26	1
Chloroform	ND		0.025	0.00047	mg/L			03/28/23 14:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					03/28/23 14:26	1
Dibromofluoromethane (Surr)	100		71 - 121					03/28/23 14:26	1
4-Bromofluorobenzene (Surr)	97		80 - 120					03/28/23 14:26	1
1,2-Dichloroethane-d4 (Surr)	104		76 - 120					03/28/23 14:26	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/28/23 13:24	03/29/23 16:24	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/28/23 13:24	03/29/23 16:24	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/28/23 13:24	03/29/23 16:24	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/28/23 13:24	03/29/23 16:24	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/28/23 13:24	03/29/23 16:24	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/28/23 13:24	03/29/23 16:24	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/28/23 13:24	03/29/23 16:24	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/28/23 13:24	03/29/23 16:24	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/28/23 13:24	03/29/23 16:24	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/28/23 13:24	03/29/23 16:24	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/28/23 13:24	03/29/23 16:24	1
Pyridine	ND		0.0040	0.00036	mg/L		03/28/23 13:24	03/29/23 16:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	82		46 - 137				03/28/23 13:24	03/29/23 16:24	1
Phenol-d5 (Surr)	55		26 - 120				03/28/23 13:24	03/29/23 16:24	1
Nitrobenzene-d5 (Surr)	64		24 - 120				03/28/23 13:24	03/29/23 16:24	1
2-Fluorophenol (Surr)	61		19 - 120				03/28/23 13:24	03/29/23 16:24	1
2-Fluorobiphenyl (Surr)	75		33 - 120				03/28/23 13:24	03/29/23 16:24	1
2,4,6-Tribromophenol (Surr)	59		10 - 120				03/28/23 13:24	03/29/23 16:24	1

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/28/23 13:28	03/29/23 11:43	1
Endrin	ND		0.00050	0.0000065	mg/L		03/28/23 13:28	03/29/23 11:43	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/28/23 13:28	03/29/23 11:43	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/28/23 13:28	03/29/23 11:43	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/28/23 13:28	03/29/23 11:43	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/28/23 13:28	03/29/23 11:43	1
Toxaphene	ND		0.020	0.000058	mg/L		03/28/23 13:28	03/29/23 11:43	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	73		10 - 145	03/28/23 13:28	03/29/23 11:43	1
DCB Decachlorobiphenyl	73		10 - 145	03/28/23 13:28	03/29/23 11:43	1
Tetrachloro-m-xylene	67		10 - 123	03/28/23 13:28	03/29/23 11:43	1
Tetrachloro-m-xylene	72		10 - 123	03/28/23 13:28	03/29/23 11:43	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	ND		59	29	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1221	ND		59	35	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1232	ND		59	25	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1242	ND		59	22	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1248	ND		59	20	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1254	ND		59	25	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1260	ND		59	25	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1262	ND		59	26	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1
Aroclor-1268	ND		59	19	ug/Kg	✱	03/29/23 09:04	03/29/23 16:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	91		10 - 149	03/29/23 09:04	03/29/23 16:14	1
DCB Decachlorobiphenyl	87		10 - 174	03/29/23 09:04	03/29/23 16:14	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/29/23 19:00	03/30/23 17:55	1
2,4-D	ND		0.050	0.016	mg/L		03/29/23 19:00	03/30/23 17:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	61		26 - 136	03/29/23 19:00	03/30/23 17:55	1
2,4-Dichlorophenylacetic acid (Surr)	63		26 - 136	03/29/23 19:00	03/30/23 17:55	1

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	35	B	5.8	0.061	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,4,6,7,8-HpCDF	65	B	5.8	0.042	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,4,7,8-HxCDD	1.5	J	5.8	0.043	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,4,7,8-HxCDF	18	B	5.8	0.16	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,4,7,8,9-HpCDF	13	B	5.8	0.056	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,6,7,8-HxCDD	2.6	J	5.8	0.046	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,6,7,8-HxCDF	13		5.8	0.15	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,7,8-PeCDD	1.7	J I B	5.8	0.038	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,7,8-PeCDF	5.9		5.8	0.12	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,7,8,9-HxCDD	2.1	J B	5.8	0.042	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
1,2,3,7,8,9-HxCDF	4.0	J B	5.8	0.18	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
2,3,4,6,7,8-HxCDF	8.8	B	5.8	0.14	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
2,3,4,7,8-PeCDF	9.1	B	5.8	0.093	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
2,3,7,8-TCDD	0.57	J B	1.2	0.018	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
2,3,7,8-TCDF	2.1		1.2	0.074	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
OCDD	200	B	12	0.080	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
OCDF	100	B	12	0.053	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
Total HxCDD	32	B	5.8	0.044	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1
Total HxCDF	110	I B	5.8	0.16	ng/Kg	✱	04/03/23 12:06	04/05/23 04:14	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.7

Method: SW846 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	81	B	5.8	0.061	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Total HpCDF	110	B	5.8	0.049	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Total PeCDD	20	IB	5.8	0.038	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Total PeCDF	100	IB	5.8	0.11	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Total TCDD	12	IB	1.2	0.018	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Total TCDF	48	IB	1.2	0.074	ng/Kg	☼	04/03/23 12:06	04/05/23 04:14	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-OCDF	78		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-OCDD	79		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-2,3,7,8-TCDF	67		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-2,3,7,8-TCDD	67		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-2,3,4,7,8-PeCDF	67		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-2,3,4,6,7,8-HxCDF	75		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,7,8,9-HxCDF	75		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,7,8,9-HxCDD	76		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,7,8-PeCDD	66		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,7,8-PeCDD	63		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,6,7,8-HxCDF	77		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,6,7,8-HxCDD	73		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,4,7,8,9-HpCDF	76		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,4,7,8-HxCDF	74		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,4,7,8-HxCDD	72		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,4,6,7,8-HpCDF	75		40 - 135				04/03/23 12:06	04/05/23 04:14	1
13C-1,2,3,4,6,7,8-HpCDD	74		40 - 135				04/03/23 12:06	04/05/23 04:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	84.7		0.1	0.1	%			03/28/23 14:26	1
Percent Moisture (EPA Moisture)	15.3		0.1	0.1	%			03/28/23 14:26	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	123	105	132	129 S1+
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	120	106	129	125
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	76	79	70	84
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	80	70	74	69
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	78	76	70	80
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	78	88	61	89
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	81	79	80	85
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	123	96	123	116
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	77	71	72	75
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	84	76	86	83
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	77	87	79	88
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	77	79	65	75
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	80	75	80	81
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	79	78	78	76
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	78	78	79	78
LCS 240-566928/2-A	Lab Control Sample	85	78	75	78
LCS 240-567081/4	Lab Control Sample	122	109	120	118
LCS 240-567084/7	Lab Control Sample	80	82	74	81
MB 240-566928/1-A	Method Blank	80	78	70	83
MB 240-567049/1-A	Method Blank	120	101	122	118
MB 240-567049/2-A	Method Blank	74	88	61	87

Surrogate Legend
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-566958/10	Lab Control Sample	96	90	88	94

Surrogate Legend
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	102	102	94	107
240-182548-12	WC-S. TRACK-SP2-COMP06-10	100	100	97	104
LB 240-566896/1-A MB	Method Blank	106	104	94	113

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	103	59	50	56	65	95
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	135	109	76	88	114	102
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	99	70	48	55	75	122 S1+
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	93	72	57	60	78	100
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	87	62	42	49	71	85
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	99	77	54	66	83	109
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	90	70	54	60	79	80
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	98	84	51	67	79	87
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	91	59	47	53	69	96
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	81	64	52	55	72	89
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	98	73	57	61	83	110
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	98	85	76	80	90	116
LCS 240-566998/2-A	Lab Control Sample	116	78	72	77	84	112
MB 240-566998/1-A	Method Blank	122	78	75	72	89	54

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-567046/5-A	Lab Control Sample	90	59	77	69	80	72
MB 240-567046/4-A	Method Blank	99	63	75	71	89	69

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	89	58	69	65	81	64
240-182548-12	WC-S. TRACK-SP2-COMP06-10	82	55	64	61	75	59
240-182548-12 MS	WC-S. TRACK-SP2-COMP06-10	89	63	71	71	76	71

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
LCS 240-567051/5-A	Lab Control Sample	80	85	74	85
MB 240-567051/4-A	Method Blank	76	78	69	79

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-145)	DCBP2 (10-145)	TCX1 (10-123)	TCX2 (10-123)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	73	75	73	80
240-182548-11 MS	WC-S. TRACK-SP2-COMP01-05	82	82	66	72
240-182548-12	WC-S. TRACK-SP2-COMP06-10	73	73	67	72

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (10-149)	DCBP2 (10-174)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	81	78
240-182548-12	WC-S. TRACK-SP2-COMP06-10	91	87
LCS 240-567137/2-A	Lab Control Sample	118	129
MB 240-567137/1-A	Method Blank	117	130

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-358880/2-A	Lab Control Sample	73	77
MB 410-358880/1-A	Method Blank	65	65

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	63	63
240-182548-12	WC-S. TRACK-SP2-COMP06-10	61	63

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-566928/1-A
Matrix: Solid
Analysis Batch: 566934

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566928

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.25	0.078	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,1,2,2-Tetrachloroethane	ND		0.25	0.15	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.25	0.067	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,1,2-Trichloroethane	ND		0.25	0.057	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,1-Dichloroethane	ND		0.25	0.048	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,1-Dichloroethene	ND		0.25	0.082	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,2,4-Trichlorobenzene	ND		0.25	0.13	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,2-Dibromo-3-Chloropropane	ND		0.50	0.22	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Ethylene Dibromide	ND		0.25	0.079	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,2-Dichlorobenzene	ND		0.25	0.12	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,2-Dichloroethane	ND		0.25	0.047	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,2-Dichloropropane	ND		0.25	0.037	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,3-Dichlorobenzene	ND		0.25	0.046	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
1,4-Dichlorobenzene	ND		0.25	0.055	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
2-Butanone (MEK)	ND		1.0	0.16	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
2-Hexanone	ND		1.0	0.26	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
4-Methyl-2-pentanone (MIBK)	ND		1.0	0.24	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Acetone	ND		1.0	0.24	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Benzene	ND		0.25	0.042	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Dichlorobromomethane	ND		0.25	0.061	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Bromoform	ND		0.25	0.23	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Bromomethane	ND		0.25	0.17	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Carbon disulfide	ND		0.25	0.11	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Carbon tetrachloride	ND		0.25	0.10	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Chlorobenzene	ND		0.25	0.035	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Chloroethane	ND		0.25	0.15	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Chloroform	ND		0.25	0.054	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Chloromethane	ND		0.25	0.066	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
cis-1,2-Dichloroethene	ND		0.25	0.040	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
cis-1,3-Dichloropropene	ND		0.25	0.12	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Cyclohexane	ND		0.50	0.16	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Chlorodibromomethane	ND		0.25	0.12	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Dichlorodifluoromethane	ND		0.25	0.053	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Ethylbenzene	ND		0.25	0.047	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Isopropylbenzene	ND		0.25	0.038	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Methyl acetate	ND		1.3	0.17	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Methyl tert-butyl ether	ND		0.25	0.037	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Methylcyclohexane	ND		0.50	0.066	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Methylene Chloride	ND		0.50	0.38	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Styrene	ND		0.25	0.052	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Tetrachloroethene	ND		0.25	0.097	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Toluene	ND		0.25	0.24	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
trans-1,2-Dichloroethene	ND		0.25	0.062	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
trans-1,3-Dichloropropene	ND		0.25	0.11	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Trichloroethene	ND		0.25	0.14	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Trichlorofluoromethane	ND		0.25	0.14	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Vinyl chloride	ND		0.25	0.12	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Xylenes, Total	ND		0.50	0.091	mg/Kg		03/27/23 18:16	03/28/23 07:56	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-566928/1-A
Matrix: Solid
Analysis Batch: 566934

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566928

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		2.5	1.4	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Methyl acrylate	ND		0.50	0.12	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
2-Ethylhexyl acrylate	ND		2.5	1.9	mg/Kg		03/27/23 18:16	03/28/23 07:56	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
Toluene-d8 (Surr)	80		56 - 125				03/27/23 18:16	03/28/23 07:56	1
Dibromofluoromethane (Surr)	78		41 - 138				03/27/23 18:16	03/28/23 07:56	1
4-Bromofluorobenzene (Surr)	70		41 - 143				03/27/23 18:16	03/28/23 07:56	1
1,2-Dichloroethane-d4 (Surr)	83		58 - 125				03/27/23 18:16	03/28/23 07:56	1

Lab Sample ID: LCS 240-566928/2-A
Matrix: Solid
Analysis Batch: 566934

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566928

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	1.25	1.18		mg/Kg		95	74 - 136
1,1,2,2-Tetrachloroethane	1.25	1.01		mg/Kg		81	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	1.25	1.56		mg/Kg		125	64 - 148
1,1,2-Trichloroethane	1.25	1.23		mg/Kg		98	79 - 120
1,1-Dichloroethane	1.25	1.20		mg/Kg		96	74 - 121
1,1-Dichloroethene	1.25	1.37		mg/Kg		110	68 - 141
1,2,4-Trichlorobenzene	1.25	1.02		mg/Kg		82	58 - 132
1,2-Dibromo-3-Chloropropane	1.25	0.745		mg/Kg		60	52 - 133
Ethylene Dibromide	1.25	1.14		mg/Kg		91	80 - 121
1,2-Dichlorobenzene	1.25	1.14		mg/Kg		91	73 - 120
1,2-Dichloroethane	1.25	1.19		mg/Kg		95	71 - 123
1,2-Dichloropropane	1.25	1.18		mg/Kg		94	76 - 126
1,3-Dichlorobenzene	1.25	1.14		mg/Kg		91	73 - 120
1,4-Dichlorobenzene	1.25	1.10		mg/Kg		88	74 - 120
2-Butanone (MEK)	2.50	2.84		mg/Kg		114	63 - 142
2-Hexanone	2.50	2.34		mg/Kg		94	65 - 142
4-Methyl-2-pentanone (MIBK)	2.50	2.16		mg/Kg		86	62 - 142
Acetone	2.50	3.34		mg/Kg		134	58 - 160
Benzene	1.25	1.22		mg/Kg		97	76 - 121
Dichlorobromomethane	1.25	1.07		mg/Kg		85	71 - 138
Bromoform	1.25	0.874		mg/Kg		70	57 - 140
Bromomethane	1.25	0.825		mg/Kg		66	10 - 171
Carbon disulfide	1.25	1.07		mg/Kg		86	43 - 152
Carbon tetrachloride	1.25	1.17		mg/Kg		94	64 - 144
Chlorobenzene	1.25	1.15		mg/Kg		92	80 - 120
Chloroethane	1.25	1.13		mg/Kg		90	11 - 164
Chloroform	1.25	1.22		mg/Kg		97	78 - 120
Chloromethane	1.25	0.905		mg/Kg		72	41 - 142
cis-1,2-Dichloroethene	1.25	1.18		mg/Kg		94	78 - 124
cis-1,3-Dichloropropene	1.25	0.948		mg/Kg		76	70 - 133
Cyclohexane	1.25	1.31		mg/Kg		105	65 - 137
Chlorodibromomethane	1.25	0.952		mg/Kg		76	68 - 131
Dichlorodifluoromethane	1.25	0.772		mg/Kg		62	21 - 150

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-566928/2-A

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 566928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	1.25	1.17		mg/Kg		94	80 - 120
Isopropylbenzene	1.25	1.22		mg/Kg		98	80 - 130
Methyl acetate	2.50	2.44		mg/Kg		97	60 - 133
Methyl tert-butyl ether	1.25	1.11		mg/Kg		89	70 - 130
Methylcyclohexane	1.25	1.24		mg/Kg		99	70 - 138
Methylene Chloride	1.25	1.11		mg/Kg		89	71 - 124
Styrene	1.25	1.25		mg/Kg		100	75 - 140
Tetrachloroethene	1.25	1.18		mg/Kg		95	76 - 127
Toluene	1.25	1.24		mg/Kg		99	80 - 120
trans-1,2-Dichloroethene	1.25	1.25		mg/Kg		100	76 - 130
trans-1,3-Dichloropropene	1.25	0.906		mg/Kg		72	61 - 121
Trichloroethene	1.25	1.11		mg/Kg		89	74 - 130
Trichlorofluoromethane	1.25	1.22		mg/Kg		98	50 - 154
Vinyl chloride	1.25	1.12		mg/Kg		89	49 - 146
Xylenes, Total	2.50	2.46		mg/Kg		98	80 - 122
m-Xylene & p-Xylene	1.25	1.19		mg/Kg		95	80 - 122
o-Xylene	1.25	1.27		mg/Kg		102	80 - 124
Butyl acrylate	5.00	3.96		mg/Kg		79	61 - 120
Methyl acrylate	5.00	4.51		mg/Kg		90	76 - 120
2-Ethylhexyl acrylate	5.00	4.10		mg/Kg		82	57 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	85		56 - 125
Dibromofluoromethane (Surr)	78		41 - 138
4-Bromofluorobenzene (Surr)	75		41 - 143
1,2-Dichloroethane-d4 (Surr)	78		58 - 125

Lab Sample ID: 240-182548-10 MS

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
1,1,1-Trichloroethane	ND		1.03	0.957		mg/Kg	☼	93	46 - 144
1,1,1,2-Tetrachloroethane	ND		1.03	0.856		mg/Kg	☼	83	26 - 159
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.03	1.12		mg/Kg	☼	108	35 - 164
1,1,2-Trichloroethane	ND		1.03	0.978		mg/Kg	☼	95	26 - 149
1,1-Dichloroethane	ND		1.03	0.984		mg/Kg	☼	95	46 - 135
1,1-Dichloroethene	ND		1.03	1.04		mg/Kg	☼	100	44 - 160
1,2,4-Trichlorobenzene	ND		1.03	0.688		mg/Kg	☼	67	10 - 120
1,2-Dibromo-3-Chloropropane	ND		1.03	0.548		mg/Kg	☼	53	12 - 144
Ethylene Dibromide	ND		1.03	0.931		mg/Kg	☼	90	31 - 142
1,2-Dichlorobenzene	ND		1.03	0.844		mg/Kg	☼	82	10 - 126
1,2-Dichloroethane	ND		1.03	0.972		mg/Kg	☼	94	40 - 132
1,2-Dichloropropane	ND		1.03	0.980		mg/Kg	☼	95	45 - 133
1,3-Dichlorobenzene	ND		1.03	0.809		mg/Kg	☼	78	10 - 131
1,4-Dichlorobenzene	ND		1.03	0.863		mg/Kg	☼	84	10 - 129
2-Butanone (MEK)	ND		2.06	2.34		mg/Kg	☼	113	30 - 157
2-Hexanone	ND		2.06	1.91		mg/Kg	☼	93	20 - 166

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182548-10 MS

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566934

Prep Batch: 566928

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
4-Methyl-2-pentanone (MIBK)	ND		2.06	1.76		mg/Kg	✱	85	31 - 159
Acetone	ND		2.06	2.53		mg/Kg	✱	123	35 - 167
Benzene	0.14	J	1.03	1.14		mg/Kg	✱	97	39 - 134
Dichlorobromomethane	ND		1.03	0.873		mg/Kg	✱	85	32 - 146
Bromoform	ND		1.03	0.820		mg/Kg	✱	79	12 - 144
Bromomethane	ND		1.03	0.735		mg/Kg	✱	71	10 - 161
Carbon disulfide	ND		1.03	0.853		mg/Kg	✱	83	24 - 153
Carbon tetrachloride	ND		1.03	0.936		mg/Kg	✱	91	37 - 145
Chlorobenzene	ND		1.03	0.954		mg/Kg	✱	92	18 - 134
Chloroethane	ND		1.03	0.911		mg/Kg	✱	88	14 - 159
Chloroform	ND		1.03	0.994		mg/Kg	✱	96	43 - 134
Chloromethane	ND		1.03	0.727		mg/Kg	✱	70	32 - 151
cis-1,2-Dichloroethene	ND		1.03	0.978		mg/Kg	✱	95	48 - 132
cis-1,3-Dichloropropene	ND		1.03	0.796		mg/Kg	✱	77	23 - 139
Cyclohexane	ND		1.03	1.10		mg/Kg	✱	107	31 - 147
Chlorodibromomethane	ND		1.03	0.798		mg/Kg	✱	77	25 - 143
Dichlorodifluoromethane	ND		1.03	0.626		mg/Kg	✱	61	16 - 157
Ethylbenzene	ND		1.03	1.02		mg/Kg	✱	99	17 - 137
Isopropylbenzene	ND		1.03	1.03		mg/Kg	✱	99	10 - 146
Methyl acetate	0.16	J	2.06	2.12		mg/Kg	✱	95	13 - 164
Methyl tert-butyl ether	ND		1.03	0.898		mg/Kg	✱	87	55 - 134
Methylcyclohexane	0.19	J	1.03	1.17		mg/Kg	✱	95	20 - 153
Methylene Chloride	ND		1.03	0.918		mg/Kg	✱	89	38 - 145
Styrene	ND		1.03	1.07		mg/Kg	✱	103	10 - 149
Tetrachloroethene	ND		1.03	0.934		mg/Kg	✱	91	19 - 147
Toluene	ND		1.03	0.991		mg/Kg	✱	96	30 - 137
trans-1,2-Dichloroethene	ND		1.03	0.977		mg/Kg	✱	95	41 - 145
trans-1,3-Dichloropropene	ND		1.03	0.737		mg/Kg	✱	71	19 - 130
Trichloroethene	ND		1.03	0.923		mg/Kg	✱	89	21 - 158
Trichlorofluoromethane	ND		1.03	0.983		mg/Kg	✱	95	36 - 161
Vinyl chloride	ND		1.03	0.884		mg/Kg	✱	86	32 - 163
Xylenes, Total	0.11	J	2.06	2.12		mg/Kg	✱	97	17 - 138
m-Xylene & p-Xylene	0.051	J	1.03	1.02		mg/Kg	✱	94	10 - 141
o-Xylene	0.063	J	1.03	1.10		mg/Kg	✱	101	18 - 139
Butyl acrylate	8.6		4.13	12.3		mg/Kg	✱	89	10 - 150
Methyl acrylate	ND		4.13	3.90		mg/Kg	✱	94	10 - 150
2-Ethylhexyl acrylate	ND		4.13	3.85		mg/Kg	✱	93	10 - 150

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	79		56 - 125
Dibromofluoromethane (Surr)	78		41 - 138
4-Bromofluorobenzene (Surr)	78		41 - 143
1,2-Dichloroethane-d4 (Surr)	76		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182548-10 MSD

Matrix: Solid

Analysis Batch: 566934

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566928

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1,1-Trichloroethane	ND		1.03	0.810		mg/Kg	☼	78	46 - 144	17	37
1,1,1,2-Tetrachloroethane	ND		1.03	0.817		mg/Kg	☼	79	26 - 159	5	40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.03	0.836		mg/Kg	☼	81	35 - 164	29	37
1,1,2-Trichloroethane	ND		1.03	0.909		mg/Kg	☼	88	26 - 149	7	40
1,1-Dichloroethane	ND		1.03	0.901		mg/Kg	☼	87	46 - 135	9	36
1,1-Dichloroethene	ND		1.03	0.860		mg/Kg	☼	83	44 - 160	19	37
1,2,4-Trichlorobenzene	ND		1.03	0.715		mg/Kg	☼	69	10 - 120	4	40
1,2-Dibromo-3-Chloropropane	ND		1.03	0.607		mg/Kg	☼	59	12 - 144	10	40
Ethylene Dibromide	ND		1.03	0.785		mg/Kg	☼	76	31 - 142	17	40
1,2-Dichlorobenzene	ND		1.03	0.796		mg/Kg	☼	77	10 - 126	6	40
1,2-Dichloroethane	ND		1.03	0.916		mg/Kg	☼	89	40 - 132	6	35
1,2-Dichloropropane	ND		1.03	0.905		mg/Kg	☼	88	45 - 133	8	37
1,3-Dichlorobenzene	ND		1.03	0.775		mg/Kg	☼	75	10 - 131	4	40
1,4-Dichlorobenzene	ND		1.03	0.799		mg/Kg	☼	77	10 - 129	8	40
2-Butanone (MEK)	ND		2.06	2.18		mg/Kg	☼	105	30 - 157	7	40
2-Hexanone	ND		2.06	1.93		mg/Kg	☼	93	20 - 166	1	40
4-Methyl-2-pentanone (MIBK)	ND		2.06	1.78		mg/Kg	☼	86	31 - 159	1	40
Acetone	ND		2.06	2.36		mg/Kg	☼	115	35 - 167	7	40
Benzene	0.14	J	1.03	1.03		mg/Kg	☼	86	39 - 134	10	40
Dichlorobromomethane	ND		1.03	0.789		mg/Kg	☼	76	32 - 146	10	39
Bromoform	ND		1.03	0.717		mg/Kg	☼	70	12 - 144	13	40
Bromomethane	ND		1.03	0.656		mg/Kg	☼	64	10 - 161	11	40
Carbon disulfide	ND		1.03	0.720		mg/Kg	☼	70	24 - 153	17	40
Carbon tetrachloride	ND		1.03	0.784		mg/Kg	☼	76	37 - 145	18	38
Chlorobenzene	ND		1.03	0.863		mg/Kg	☼	84	18 - 134	10	40
Chloroethane	ND		1.03	0.788		mg/Kg	☼	76	14 - 159	15	40
Chloroform	ND		1.03	0.889		mg/Kg	☼	86	43 - 134	11	36
Chloromethane	ND		1.03	0.658		mg/Kg	☼	64	32 - 151	10	38
cis-1,2-Dichloroethene	ND		1.03	0.884		mg/Kg	☼	86	48 - 132	10	37
cis-1,3-Dichloropropene	ND		1.03	0.738		mg/Kg	☼	71	23 - 139	8	39
Cyclohexane	ND		1.03	0.814		mg/Kg	☼	79	31 - 147	30	39
Chlorodibromomethane	ND		1.03	0.673		mg/Kg	☼	65	25 - 143	17	40
Dichlorodifluoromethane	ND		1.03	0.528		mg/Kg	☼	51	16 - 157	17	40
Ethylbenzene	ND		1.03	0.867		mg/Kg	☼	84	17 - 137	17	40
Isopropylbenzene	ND		1.03	0.890		mg/Kg	☼	86	10 - 146	14	40
Methyl acetate	0.16	J	2.06	1.96		mg/Kg	☼	87	13 - 164	8	40
Methyl tert-butyl ether	ND		1.03	0.923		mg/Kg	☼	89	55 - 134	3	37
Methylcyclohexane	0.19	J	1.03	0.876		mg/Kg	☼	66	20 - 153	29	40
Methylene Chloride	ND		1.03	0.851		mg/Kg	☼	82	38 - 145	8	40
Styrene	ND		1.03	0.979		mg/Kg	☼	95	10 - 149	9	40
Tetrachloroethene	ND		1.03	0.755		mg/Kg	☼	73	19 - 147	21	40
Toluene	ND		1.03	0.870		mg/Kg	☼	84	30 - 137	13	40
trans-1,2-Dichloroethene	ND		1.03	0.962		mg/Kg	☼	93	41 - 145	2	37
trans-1,3-Dichloropropene	ND		1.03	0.659		mg/Kg	☼	64	19 - 130	11	40
Trichloroethene	ND		1.03	0.819		mg/Kg	☼	79	21 - 158	12	40
Trichlorofluoromethane	ND		1.03	0.897		mg/Kg	☼	87	36 - 161	9	40
Vinyl chloride	ND		1.03	0.818		mg/Kg	☼	79	32 - 163	8	38
Xylenes, Total	0.11	J	2.06	1.92		mg/Kg	☼	88	17 - 138	10	40

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-182548-10 MSD

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566934

Prep Batch: 566928

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
m-Xylene & p-Xylene	0.051	J	1.03	0.922		mg/Kg	☼	84	10 - 141	10	40
o-Xylene	0.063	J	1.03	1.00		mg/Kg	☼	91	18 - 139	9	40
Butyl acrylate	8.6		4.13	12.5		mg/Kg	☼	95	10 - 150	2	30
Methyl acrylate	ND		4.13	3.87		mg/Kg	☼	94	10 - 150	1	30
2-Ethylhexyl acrylate	ND		4.13	4.48		mg/Kg	☼	108	10 - 150	15	30

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	78		56 - 125
Dibromofluoromethane (Surr)	78		41 - 138
4-Bromofluorobenzene (Surr)	79		41 - 143
1,2-Dichloroethane-d4 (Surr)	78		58 - 125

Lab Sample ID: LCS 240-566958/10

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 566958

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
1,1-Dichloroethane	1.00	0.930		mg/L		93	74 - 127
1,2-Dichloroethane	1.00	0.990		mg/L		99	72 - 120
2-Butanone (MEK)	2.00	2.01		mg/L		100	68 - 130
Benzene	1.00	0.957		mg/L		96	80 - 121
Carbon tetrachloride	1.00	0.880		mg/L		88	69 - 120
Chlorobenzene	1.00	1.02		mg/L		102	80 - 120
Chloroform	1.00	0.935		mg/L		93	75 - 120
Tetrachloroethene	1.00	1.05		mg/L		105	74 - 120
Trichloroethene	1.00	0.910		mg/L		91	75 - 120
Vinyl chloride	1.00	0.803		mg/L		80	53 - 147

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	90		71 - 121
4-Bromofluorobenzene (Surr)	88		80 - 120
1,2-Dichloroethane-d4 (Surr)	94		76 - 120

Lab Sample ID: MB 240-567049/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 567081

Prep Batch: 567049

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 01:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567049/1-A

Matrix: Solid

Analysis Batch: 567081

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 567049

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Acetone	0.0429		0.025	0.021	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Butyl acrylate	ND		0.050	0.019	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg		03/28/23 14:04	03/29/23 01:57	1
2-Ethylhexyl acrylate	ND		0.050	0.024	mg/Kg		03/28/23 14:04	03/29/23 01:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	120		56 - 125	03/28/23 14:04	03/29/23 01:57	1
Dibromofluoromethane (Surr)	101		41 - 138	03/28/23 14:04	03/29/23 01:57	1
4-Bromofluorobenzene (Surr)	122		41 - 143	03/28/23 14:04	03/29/23 01:57	1
1,2-Dichloroethane-d4 (Surr)	118		58 - 125	03/28/23 14:04	03/29/23 01:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567049/2-A
Matrix: Solid
Analysis Batch: 567084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567049

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Acetone	0.0387		0.025	0.021	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/28/23 14:04	03/29/23 11:50	1

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567049/2-A

Matrix: Solid

Analysis Batch: 567084

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 567049

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		0.050	0.019	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methyl acrylate	ND		0.010	0.0031	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
2-Ethylhexyl acrylate	ND		0.050	0.024	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
Toluene-d8 (Surr)	74		56 - 125				03/28/23 14:04	03/29/23 11:50	1
Dibromofluoromethane (Surr)	88		41 - 138				03/28/23 14:04	03/29/23 11:50	1
4-Bromofluorobenzene (Surr)	61		41 - 143				03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125				03/28/23 14:04	03/29/23 11:50	1

Lab Sample ID: LCS 240-567081/4

Matrix: Solid

Analysis Batch: 567081

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0252		mg/Kg		101	74 - 136
1,1,2,2-Tetrachloroethane	0.0250	0.0272		mg/Kg		109	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0219		mg/Kg		88	64 - 148
1,1,2-Trichloroethane	0.0250	0.0264		mg/Kg		106	79 - 120
1,1-Dichloroethane	0.0250	0.0249		mg/Kg		99	74 - 121
1,1-Dichloroethene	0.0250	0.0234		mg/Kg		94	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0201		mg/Kg		80	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0188		mg/Kg		75	52 - 133
Ethylene Dibromide	0.0250	0.0239		mg/Kg		96	80 - 121
1,2-Dichlorobenzene	0.0250	0.0233		mg/Kg		93	73 - 120
1,2-Dichloroethane	0.0250	0.0252		mg/Kg		101	71 - 123
1,2-Dichloropropane	0.0250	0.0255		mg/Kg		102	76 - 126
1,3-Dichlorobenzene	0.0250	0.0233		mg/Kg		93	73 - 120
1,4-Dichlorobenzene	0.0250	0.0233		mg/Kg		93	74 - 120
2-Butanone (MEK)	0.0500	0.0548		mg/Kg		110	63 - 142
2-Hexanone	0.0500	0.0552		mg/Kg		110	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0527		mg/Kg		105	62 - 142
Acetone	0.0500	0.0940	*+	mg/Kg		188	58 - 160
Benzene	0.0250	0.0257		mg/Kg		103	76 - 121
Dichlorobromomethane	0.0250	0.0233		mg/Kg		93	71 - 138
Bromoform	0.0250	0.0181		mg/Kg		73	57 - 140
Bromomethane	0.0250	0.0264		mg/Kg		106	10 - 171
Carbon disulfide	0.0250	0.0225		mg/Kg		90	43 - 152
Carbon tetrachloride	0.0250	0.0215		mg/Kg		86	64 - 144
Chlorobenzene	0.0250	0.0242		mg/Kg		97	80 - 120
Chloroethane	0.0250	0.0282		mg/Kg		113	11 - 164
Chloroform	0.0250	0.0252		mg/Kg		101	78 - 120
Chloromethane	0.0250	0.0216		mg/Kg		86	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0252		mg/Kg		101	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0229		mg/Kg		92	70 - 133
Cyclohexane	0.0250	0.0253		mg/Kg		101	65 - 137
Chlorodibromomethane	0.0250	0.0213		mg/Kg		85	68 - 131
Dichlorodifluoromethane	0.0250	0.0264		mg/Kg		105	21 - 150

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567081/4

Matrix: Solid

Analysis Batch: 567081

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0250	0.0245		mg/Kg		98	80 - 120
Isopropylbenzene	0.0250	0.0254		mg/Kg		102	80 - 130
Methyl acetate	0.0500	0.0448		mg/Kg		90	60 - 133
Methyl tert-butyl ether	0.0250	0.0244		mg/Kg		98	70 - 130
Methylcyclohexane	0.0250	0.0254		mg/Kg		101	70 - 138
Methylene Chloride	0.0250	0.0253		mg/Kg		101	71 - 124
Styrene	0.0250	0.0259		mg/Kg		103	75 - 140
Tetrachloroethene	0.0250	0.0240		mg/Kg		96	76 - 127
Toluene	0.0250	0.0264		mg/Kg		106	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0239		mg/Kg		96	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0244		mg/Kg		98	61 - 121
Trichloroethene	0.0250	0.0221		mg/Kg		88	74 - 130
Trichlorofluoromethane	0.0250	0.0230		mg/Kg		92	50 - 154
Vinyl chloride	0.0250	0.0259		mg/Kg		104	49 - 146
Xylenes, Total	0.0500	0.0500		mg/Kg		100	80 - 122
m-Xylene & p-Xylene	0.0250	0.0246		mg/Kg		98	80 - 122
o-Xylene	0.0250	0.0254		mg/Kg		102	80 - 124
Butyl acrylate	0.100	0.104		mg/Kg		104	10 - 120
Methyl acrylate	0.100	0.101		mg/Kg		101	10 - 120
2-Ethylhexyl acrylate	0.100	0.0782		mg/Kg		78	10 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	122		56 - 125
Dibromofluoromethane (Surr)	109		41 - 138
4-Bromofluorobenzene (Surr)	120		41 - 143
1,2-Dichloroethane-d4 (Surr)	118		58 - 125

Lab Sample ID: LCS 240-567084/7

Matrix: Solid

Analysis Batch: 567084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0264		mg/Kg		106	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0244		mg/Kg		98	66 - 129
1,1,1,2-Trichloro-1,1,2-trifluoroethane	0.0250	0.0297		mg/Kg		119	64 - 148
1,1,2-Trichloroethane	0.0250	0.0260		mg/Kg		104	79 - 120
1,1-Dichloroethane	0.0250	0.0239		mg/Kg		96	74 - 121
1,1-Dichloroethene	0.0250	0.0265		mg/Kg		106	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0232		mg/Kg		93	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0194		mg/Kg		78	52 - 133
Ethylene Dibromide	0.0250	0.0247		mg/Kg		99	80 - 121
1,2-Dichlorobenzene	0.0250	0.0252		mg/Kg		101	73 - 120
1,2-Dichloroethane	0.0250	0.0250		mg/Kg		100	71 - 123
1,2-Dichloropropane	0.0250	0.0236		mg/Kg		95	76 - 126
1,3-Dichlorobenzene	0.0250	0.0245		mg/Kg		98	73 - 120
1,4-Dichlorobenzene	0.0250	0.0244		mg/Kg		97	74 - 120
2-Butanone (MEK)	0.0500	0.0527		mg/Kg		105	63 - 142
2-Hexanone	0.0500	0.0465		mg/Kg		93	65 - 142

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567084/7

Matrix: Solid

Analysis Batch: 567084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
4-Methyl-2-pentanone (MIBK)	0.0500	0.0411		mg/Kg		82	62 - 142
Acetone	0.0500	0.0860	*+	mg/Kg		172	58 - 160
Benzene	0.0250	0.0248		mg/Kg		99	76 - 121
Dichlorobromomethane	0.0250	0.0244		mg/Kg		98	71 - 138
Bromoform	0.0250	0.0228		mg/Kg		91	57 - 140
Bromomethane	0.0250	0.0249		mg/Kg		100	10 - 171
Carbon disulfide	0.0250	0.0231		mg/Kg		92	43 - 152
Carbon tetrachloride	0.0250	0.0281		mg/Kg		113	64 - 144
Chlorobenzene	0.0250	0.0249		mg/Kg		100	80 - 120
Chloroethane	0.0250	0.0216		mg/Kg		87	11 - 164
Chloroform	0.0250	0.0262		mg/Kg		105	78 - 120
Chloromethane	0.0250	0.0170		mg/Kg		68	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0245		mg/Kg		98	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0197		mg/Kg		79	70 - 133
Cyclohexane	0.0250	0.0249		mg/Kg		100	65 - 137
Chlorodibromomethane	0.0250	0.0244		mg/Kg		98	68 - 131
Dichlorodifluoromethane	0.0250	0.0187		mg/Kg		75	21 - 150
Ethylbenzene	0.0250	0.0248		mg/Kg		99	80 - 120
Isopropylbenzene	0.0250	0.0264		mg/Kg		106	80 - 130
Methyl acetate	0.0500	0.0431		mg/Kg		86	60 - 133
Methyl tert-butyl ether	0.0250	0.0218		mg/Kg		87	70 - 130
Methylcyclohexane	0.0250	0.0256		mg/Kg		103	70 - 138
Methylene Chloride	0.0250	0.0197	J	mg/Kg		79	71 - 124
Styrene	0.0250	0.0268		mg/Kg		107	75 - 140
Tetrachloroethene	0.0250	0.0271		mg/Kg		108	76 - 127
Toluene	0.0250	0.0257		mg/Kg		103	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0255		mg/Kg		102	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0204		mg/Kg		81	61 - 121
Trichloroethene	0.0250	0.0253		mg/Kg		101	74 - 130
Trichlorofluoromethane	0.0250	0.0252		mg/Kg		101	50 - 154
Vinyl chloride	0.0250	0.0221		mg/Kg		88	49 - 146
Xylenes, Total	0.0500	0.0529		mg/Kg		106	80 - 122
m-Xylene & p-Xylene	0.0250	0.0252		mg/Kg		101	80 - 122
o-Xylene	0.0250	0.0277		mg/Kg		111	80 - 124
Butyl acrylate	0.100	0.0828		mg/Kg		83	10 - 120
Methyl acrylate	0.100	0.0888		mg/Kg		89	10 - 120
2-Ethylhexyl acrylate	0.100	0.0774		mg/Kg		77	10 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	80		56 - 125
Dibromofluoromethane (Surr)	82		41 - 138
4-Bromofluorobenzene (Surr)	74		41 - 143
1,2-Dichloroethane-d4 (Surr)	81		58 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-566896/1-A MB
Matrix: Solid
Analysis Batch: 566958

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/28/23 13:16	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/28/23 13:16	1
2-Butanone (MEK)	0.0117	J	0.25	0.0012	mg/L			03/28/23 13:16	1
Benzene	ND		0.025	0.00042	mg/L			03/28/23 13:16	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/28/23 13:16	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/28/23 13:16	1
Chloroform	ND		0.025	0.00047	mg/L			03/28/23 13:16	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/28/23 13:16	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/28/23 13:16	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/28/23 13:16	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Toluene-d8 (Surr)	106		80 - 120					03/28/23 13:16	1
Dibromofluoromethane (Surr)	104		71 - 121					03/28/23 13:16	1
4-Bromofluorobenzene (Surr)	94		80 - 120					03/28/23 13:16	1
1,2-Dichloroethane-d4 (Surr)	113		76 - 120					03/28/23 13:16	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566998/1-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566998

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/28/23 10:04	03/30/23 08:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566998/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 567268

Prep Batch: 566998

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Atrazine	ND		0.20	0.036	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Carbazole	ND		0.050	0.019	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Isophorone	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Phenol	ND		0.050	0.0080	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Butoxyethanol	ND		0.070	0.066	mg/Kg		03/28/23 10:04	03/30/23 08:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	122		46 - 137	03/28/23 10:04	03/30/23 08:57	1
Phenol-d5 (Surr)	78		26 - 120	03/28/23 10:04	03/30/23 08:57	1
Nitrobenzene-d5 (Surr)	75		25 - 120	03/28/23 10:04	03/30/23 08:57	1
2-Fluorophenol (Surr)	72		20 - 120	03/28/23 10:04	03/30/23 08:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566998/1-A

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 566998

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl (Surr)	89		34 - 120	03/28/23 10:04	03/30/23 08:57	1
2,4,6-Tribromophenol (Surr)	54		10 - 120	03/28/23 10:04	03/30/23 08:57	1

Lab Sample ID: LCS 240-566998/2-A

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 566998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
bis (2-chloroisopropyl) ether	0.667	0.419		mg/Kg		63	38 - 120
2,4,5-Trichlorophenol	0.667	0.581		mg/Kg		87	50 - 120
2,4,6-Trichlorophenol	0.667	0.581		mg/Kg		87	50 - 120
2,4-Dichlorophenol	0.667	0.533		mg/Kg		80	50 - 120
2,4-Dimethylphenol	0.667	0.453		mg/Kg		68	24 - 120
2,4-Dinitrophenol	1.33	1.16		mg/Kg		87	19 - 132
2,4-Dinitrotoluene	0.667	0.691		mg/Kg		104	64 - 120
2,6-Dinitrotoluene	0.667	0.691		mg/Kg		104	62 - 120
2-Chloronaphthalene	0.667	0.512		mg/Kg		77	51 - 120
2-Chlorophenol	0.667	0.492		mg/Kg		74	47 - 120
2-Methylnaphthalene	0.667	0.483		mg/Kg		72	38 - 120
2-Methylphenol	0.667	0.462		mg/Kg		69	45 - 120
2-Nitroaniline	0.667	0.600		mg/Kg		90	57 - 120
2-Nitrophenol	0.667	0.565		mg/Kg		85	51 - 120
3,3'-Dichlorobenzidine	1.33	1.38		mg/Kg		104	27 - 199
3-Nitroaniline	0.667	0.604		mg/Kg		91	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.17		mg/Kg		87	46 - 126
4-Bromophenyl phenyl ether	0.667	0.621		mg/Kg		93	65 - 120
4-Chloro-3-methylphenol	0.667	0.580		mg/Kg		87	51 - 120
4-Chloroaniline	0.667	0.451		mg/Kg		68	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.599		mg/Kg		90	59 - 120
4-Nitroaniline	0.667	0.720		mg/Kg		108	48 - 128
4-Nitrophenol	1.33	1.26		mg/Kg		95	43 - 120
Acenaphthene	0.667	0.529		mg/Kg		79	52 - 120
Acenaphthylene	0.667	0.533		mg/Kg		80	52 - 120
Acetophenone	0.667	0.476		mg/Kg		71	47 - 120
Anthracene	0.667	0.625		mg/Kg		94	64 - 120
Atrazine	1.33	1.28		mg/Kg		96	71 - 125
Benzaldehyde	1.33	0.879		mg/Kg		66	42 - 120
Benzo[a]anthracene	0.667	0.677		mg/Kg		102	70 - 120
Benzo[a]pyrene	0.667	0.552		mg/Kg		83	63 - 125
Benzo[b]fluoranthene	0.667	0.510		mg/Kg		77	64 - 121
Benzo[g,h,i]perylene	0.667	0.645		mg/Kg		97	62 - 120
Benzo[k]fluoranthene	0.667	0.562		mg/Kg		84	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.462		mg/Kg		69	50 - 120
Bis(2-chloroethyl)ether	0.667	0.382		mg/Kg		57	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.638		mg/Kg		96	63 - 133
Butyl benzyl phthalate	0.667	0.632		mg/Kg		95	66 - 127
Caprolactam	1.33	1.32		mg/Kg		99	67 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566998/2-A

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 566998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbazole	0.667	0.632		mg/Kg		95	61 - 129
Chrysene	0.667	0.638		mg/Kg		96	67 - 120
Dibenz(a,h)anthracene	0.667	0.626		mg/Kg		94	62 - 120
Dibenzofuran	0.667	0.562		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.681		mg/Kg		102	61 - 120
Dimethyl phthalate	0.667	0.649		mg/Kg		97	64 - 120
Di-n-butyl phthalate	0.667	0.599		mg/Kg		90	70 - 129
Di-n-octyl phthalate	0.667	0.586		mg/Kg		88	64 - 129
Fluoranthene	0.667	0.647		mg/Kg		97	71 - 124
Fluorene	0.667	0.591		mg/Kg		89	58 - 120
Hexachlorobenzene	0.667	0.621		mg/Kg		93	59 - 120
Hexachlorobutadiene	0.667	0.483		mg/Kg		72	45 - 120
Hexachlorocyclopentadiene	0.667	0.374		mg/Kg		56	10 - 120
Hexachloroethane	0.667	0.430		mg/Kg		64	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.652		mg/Kg		98	65 - 122
Isophorone	0.667	0.473		mg/Kg		71	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.464		mg/Kg		70	48 - 120
N-Nitrosodiphenylamine	0.667	0.573		mg/Kg		86	64 - 120
Naphthalene	0.667	0.450		mg/Kg		67	34 - 120
Nitrobenzene	0.667	0.451		mg/Kg		68	48 - 120
Pentachlorophenol	1.33	0.774		mg/Kg		58	10 - 120
Phenanthrene	0.667	0.573		mg/Kg		86	60 - 120
Phenol	0.667	0.458		mg/Kg		69	48 - 120
Pyrene	0.667	0.684		mg/Kg		103	67 - 120
3 & 4 Methylphenol	0.667	0.478		mg/Kg		72	49 - 120
2-Butoxyethanol	0.667	0.512		mg/Kg		77	10 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	116		46 - 137
Phenol-d5 (Surr)	78		26 - 120
Nitrobenzene-d5 (Surr)	72		25 - 120
2-Fluorophenol (Surr)	77		20 - 120
2-Fluorobiphenyl (Surr)	84		34 - 120
2,4,6-Tribromophenol (Surr)	112		10 - 120

Lab Sample ID: 240-182548-10 MS

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566998

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
1,1'-Biphenyl	0.31	J	0.768	0.890		mg/Kg	⊛	75	29 - 120
bis (2-chloroisopropyl) ether	ND		0.768	0.380	J	mg/Kg	⊛	49	10 - 120
2,4,5-Trichlorophenol	ND		0.768	ND		mg/Kg	⊛	NC	35 - 120
2,4,6-Trichlorophenol	ND	F1	0.768	ND	F1	mg/Kg	⊛	0	18 - 120
2,4-Dichlorophenol	ND		0.768	0.591	J	mg/Kg	⊛	77	21 - 120
2,4-Dimethylphenol	ND		0.768	0.610	J	mg/Kg	⊛	79	10 - 120
2,4-Dinitrophenol	ND		1.54	ND		mg/Kg	⊛	NC	10 - 126
2,4-Dinitrotoluene	ND		0.768	0.792	J	mg/Kg	⊛	103	46 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182548-10 MS

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 567268

Prep Batch: 566998

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
2,6-Dinitrotoluene	ND		0.768	0.653	J	mg/Kg	☼	85	44 - 120
2-Chloronaphthalene	ND		0.768	0.584		mg/Kg	☼	76	33 - 120
2-Chlorophenol	ND		0.768	0.497	J	mg/Kg	☼	65	19 - 120
2-Methylnaphthalene	1.4	F1	0.768	2.55	F1	mg/Kg	☼	157	13 - 122
2-Methylphenol	ND		0.768	0.507	J	mg/Kg	☼	66	12 - 120
2-Nitroaniline	ND		0.768	0.720	J	mg/Kg	☼	94	36 - 122
2-Nitrophenol	ND		0.768	0.523	J	mg/Kg	☼	68	28 - 120
3,3'-Dichlorobenzidine	ND		1.54	0.919	J	mg/Kg	☼	60	10 - 179
3-Nitroaniline	ND		0.768	0.603	J	mg/Kg	☼	79	10 - 123
4,6-Dinitro-2-methylphenol	ND		1.54	1.41	J	mg/Kg	☼	92	11 - 120
4-Bromophenyl phenyl ether	ND		0.768	0.652		mg/Kg	☼	85	49 - 120
4-Chloro-3-methylphenol	ND		0.768	0.628	J	mg/Kg	☼	82	35 - 120
4-Chloroaniline	ND	F1	0.768	ND	F1	mg/Kg	☼	0	10 - 120
4-Chlorophenyl phenyl ether	ND		0.768	0.633		mg/Kg	☼	82	45 - 120
4-Nitroaniline	ND		0.768	0.711	J	mg/Kg	☼	93	13 - 129
4-Nitrophenol	ND		1.54	1.62	J	mg/Kg	☼	106	28 - 123
Acenaphthene	0.23		0.768	0.740		mg/Kg	☼	66	33 - 120
Acenaphthylene	0.078	J	0.768	0.692		mg/Kg	☼	80	39 - 120
Acetophenone	ND		0.768	0.624	J	mg/Kg	☼	81	11 - 120
Anthracene	0.32		0.768	0.805		mg/Kg	☼	63	30 - 127
Atrazine	ND		1.54	1.41	J	mg/Kg	☼	92	52 - 126
Benzaldehyde	ND		1.54	0.795	J	mg/Kg	☼	52	13 - 120
Benzo[a]anthracene	2.8	F1	0.768	1.29	F1	mg/Kg	☼	-197	24 - 137
Benzo[a]pyrene	2.2	F1	0.768	1.13	F1	mg/Kg	☼	-135	28 - 136
Benzo[b]fluoranthene	2.3	F1	0.768	1.17	F1	mg/Kg	☼	-152	21 - 142
Benzo[g,h,i]perylene	1.3	F1	0.768	1.01	F1	mg/Kg	☼	-32	10 - 144
Benzo[k]fluoranthene	1.0	F1	0.768	0.855	F1	mg/Kg	☼	-24	36 - 135
Bis(2-chloroethoxy)methane	ND		0.768	0.459	J	mg/Kg	☼	60	25 - 120
Bis(2-chloroethyl)ether	ND		0.768	0.311	J	mg/Kg	☼	41	16 - 120
Bis(2-ethylhexyl) phthalate	ND		0.768	1.04		mg/Kg	☼	135	37 - 143
Butyl benzyl phthalate	ND		0.768	0.878		mg/Kg	☼	114	49 - 130
Caprolactam	ND		1.54	1.43	J	mg/Kg	☼	93	37 - 127
Carbazole	0.25	J	0.768	0.756		mg/Kg	☼	66	33 - 132
Chrysene	3.0	F1	0.768	1.51	F1	mg/Kg	☼	-191	28 - 129
Dibenz(a,h)anthracene	0.34		0.768	0.771		mg/Kg	☼	56	10 - 132
Dibenzofuran	1.0		0.768	1.70		mg/Kg	☼	90	33 - 120
Diethyl phthalate	ND		0.768	0.689	J	mg/Kg	☼	90	48 - 120
Dimethyl phthalate	ND		0.768	0.677	J	mg/Kg	☼	88	45 - 120
Di-n-butyl phthalate	ND		0.768	0.836		mg/Kg	☼	109	40 - 137
Di-n-octyl phthalate	ND		0.768	1.02		mg/Kg	☼	132	34 - 152
Fluoranthene	5.2		0.768	2.01	4	mg/Kg	☼	-414	31 - 140
Fluorene	0.18		0.768	0.764		mg/Kg	☼	76	43 - 120
Hexachlorobenzene	ND		0.768	0.629		mg/Kg	☼	82	44 - 120
Hexachlorobutadiene	ND		0.768	0.499	J	mg/Kg	☼	65	13 - 120
Hexachlorocyclopentadiene	ND	F1	0.768	ND	F1	mg/Kg	☼	0	10 - 120
Hexachloroethane	ND		0.768	0.412	J	mg/Kg	☼	54	10 - 120
Indeno[1,2,3-cd]pyrene	1.1	F1	0.768	0.976	F1	mg/Kg	☼	-20	10 - 139
Isophorone	ND		0.768	0.477	J	mg/Kg	☼	62	27 - 120
N-Nitrosodi-n-propylamine	ND		0.768	0.453	J	mg/Kg	☼	59	23 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182548-10 MS

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566998

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
N-Nitrosodiphenylamine	ND		0.768	0.711		mg/Kg	☼	93	30 - 128
Naphthalene	1.1		0.768	1.88		mg/Kg	☼	103	10 - 120
Nitrobenzene	ND		0.768	0.433	J	mg/Kg	☼	56	19 - 120
Pentachlorophenol	ND		1.54	1.06	J	mg/Kg	☼	69	10 - 120
Phenanthrene	2.3	F1	0.768	2.79		mg/Kg	☼	59	36 - 120
Phenol	ND		0.768	0.530	J	mg/Kg	☼	69	10 - 120
Pyrene	4.6		0.768	1.87	4	mg/Kg	☼	-353	31 - 134
3 & 4 Methylphenol	ND		0.768	0.566	J	mg/Kg	☼	74	10 - 122
2-Butoxyethanol	8.5		0.768	14.1	4	mg/Kg	☼	726	10 - 120
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Terphenyl-d14 (Surr)	98		46 - 137						
Phenol-d5 (Surr)	73		26 - 120						
Nitrobenzene-d5 (Surr)	57		25 - 120						
2-Fluorophenol (Surr)	61		20 - 120						
2-Fluorobiphenyl (Surr)	83		34 - 120						
2,4,6-Tribromophenol (Surr)	110		10 - 120						

Lab Sample ID: 240-182548-10 MSD

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566998

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1'-Biphenyl	0.31	J	0.770	0.983		mg/Kg	☼	87	29 - 120	10	45
bis (2-chloroisopropyl) ether	ND		0.770	0.521	J	mg/Kg	☼	68	10 - 120	31	45
2,4,5-Trichlorophenol	ND		0.770	ND		mg/Kg	☼	NC	35 - 120	NC	39
2,4,6-Trichlorophenol	ND	F1	0.770	ND	F1	mg/Kg	☼	0	18 - 120	NC	45
2,4-Dichlorophenol	ND		0.770	0.636	J	mg/Kg	☼	83	21 - 120	7	44
2,4-Dimethylphenol	ND		0.770	0.659	J	mg/Kg	☼	86	10 - 120	8	45
2,4-Dinitrophenol	ND		1.54	1.60	J	mg/Kg	☼	NC	10 - 126	NC	45
2,4-Dinitrotoluene	ND		0.770	0.781	J	mg/Kg	☼	101	46 - 120	1	45
2,6-Dinitrotoluene	ND		0.770	0.658	J	mg/Kg	☼	85	44 - 120	1	45
2-Chloronaphthalene	ND		0.770	0.617		mg/Kg	☼	80	33 - 120	6	45
2-Chlorophenol	ND		0.770	0.596		mg/Kg	☼	77	19 - 120	18	45
2-Methylnaphthalene	1.4	F1	0.770	2.26		mg/Kg	☼	117	13 - 122	12	45
2-Methylphenol	ND		0.770	0.576	J	mg/Kg	☼	75	12 - 120	13	45
2-Nitroaniline	ND		0.770	0.743	J	mg/Kg	☼	96	36 - 122	3	42
2-Nitrophenol	ND		0.770	0.636		mg/Kg	☼	83	28 - 120	19	45
3,3'-Dichlorobenzidine	ND		1.54	1.08	J	mg/Kg	☼	70	10 - 179	16	45
3-Nitroaniline	ND		0.770	0.653	J	mg/Kg	☼	85	10 - 123	8	45
4,6-Dinitro-2-methylphenol	ND		1.54	1.37	J	mg/Kg	☼	89	11 - 120	3	40
4-Bromophenyl phenyl ether	ND		0.770	0.640		mg/Kg	☼	83	49 - 120	2	42
4-Chloro-3-methylphenol	ND		0.770	0.662	J	mg/Kg	☼	86	35 - 120	5	42
4-Chloroaniline	ND	F1	0.770	0.414	J	mg/Kg	☼	54	10 - 120	NC	45
4-Chlorophenyl phenyl ether	ND		0.770	0.658		mg/Kg	☼	86	45 - 120	4	44
4-Nitroaniline	ND		0.770	0.749	J	mg/Kg	☼	97	13 - 129	5	38
4-Nitrophenol	ND		1.54	1.67	J	mg/Kg	☼	108	28 - 123	3	45
Acenaphthene	0.23		0.770	0.721		mg/Kg	☼	63	33 - 120	3	45

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182548-10 MSD

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 567268

Prep Batch: 566998

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
Acenaphthylene	0.078	J	0.770	0.676		mg/Kg	✖	78	39 - 120	2	45
Acetophenone	ND		0.770	0.807	J	mg/Kg	✖	105	11 - 120	26	45
Anthracene	0.32		0.770	0.756		mg/Kg	✖	56	30 - 127	6	45
Atrazine	ND		1.54	1.38	J	mg/Kg	✖	90	52 - 126	2	34
Benzaldehyde	ND		1.54	1.15	J	mg/Kg	✖	75	13 - 120	37	45
Benzo[a]anthracene	2.8	F1	0.770	1.18	F1	mg/Kg	✖	-210	24 - 137	8	42
Benzo[a]pyrene	2.2	F1	0.770	0.995	F1	mg/Kg	✖	-152	28 - 136	13	41
Benzo[b]fluoranthene	2.3	F1	0.770	1.02	F1	mg/Kg	✖	-170	21 - 142	13	42
Benzo[g,h,i]perylene	1.3	F1	0.770	0.948	F1	mg/Kg	✖	-39	10 - 144	6	40
Benzo[k]fluoranthene	1.0	F1	0.770	0.788	F1	mg/Kg	✖	-32	36 - 135	8	44
Bis(2-chloroethoxy)methane	ND		0.770	0.564	J	mg/Kg	✖	73	25 - 120	20	45
Bis(2-chloroethyl)ether	ND		0.770	0.454	J	mg/Kg	✖	59	16 - 120	37	45
Bis(2-ethylhexyl) phthalate	ND		0.770	1.02		mg/Kg	✖	132	37 - 143	2	38
Butyl benzyl phthalate	ND		0.770	0.872		mg/Kg	✖	113	49 - 130	1	41
Caprolactam	ND		1.54	1.29	J	mg/Kg	✖	84	37 - 127	10	45
Carbazole	0.25	J	0.770	0.696		mg/Kg	✖	58	33 - 132	8	45
Chrysene	3.0	F1	0.770	1.37	F1	mg/Kg	✖	-209	28 - 129	10	42
Dibenz(a,h)anthracene	0.34		0.770	0.724		mg/Kg	✖	50	10 - 132	6	37
Dibenzofuran	1.0		0.770	1.73		mg/Kg	✖	94	33 - 120	2	43
Diethyl phthalate	ND		0.770	0.710	J	mg/Kg	✖	92	48 - 120	3	38
Dimethyl phthalate	ND		0.770	0.697	J	mg/Kg	✖	91	45 - 120	3	43
Di-n-butyl phthalate	ND		0.770	0.801	J	mg/Kg	✖	104	40 - 137	4	42
Di-n-octyl phthalate	ND		0.770	0.971		mg/Kg	✖	126	34 - 152	4	39
Fluoranthene	5.2		0.770	1.74	4	mg/Kg	✖	-448	31 - 140	14	45
Fluorene	0.18		0.770	0.755		mg/Kg	✖	74	43 - 120	1	39
Hexachlorobenzene	ND		0.770	0.545		mg/Kg	✖	71	44 - 120	14	39
Hexachlorobutadiene	ND		0.770	0.580		mg/Kg	✖	75	13 - 120	15	45
Hexachlorocyclopentadiene	ND	F1	0.770	ND	F1	mg/Kg	✖	0	10 - 120	NC	45
Hexachloroethane	ND		0.770	0.533	J	mg/Kg	✖	69	10 - 120	26	45
Indeno[1,2,3-cd]pyrene	1.1	F1	0.770	0.898	F1	mg/Kg	✖	-30	10 - 139	8	41
Isophorone	ND		0.770	0.568	J	mg/Kg	✖	74	27 - 120	17	45
N-Nitrosodi-n-propylamine	ND		0.770	0.563	J	mg/Kg	✖	73	23 - 120	22	45
N-Nitrosodiphenylamine	ND		0.770	0.679		mg/Kg	✖	88	30 - 128	5	44
Naphthalene	1.1		0.770	1.90		mg/Kg	✖	105	10 - 120	1	45
Nitrobenzene	ND		0.770	0.571	J	mg/Kg	✖	74	19 - 120	27	45
Pentachlorophenol	ND		1.54	1.06	J	mg/Kg	✖	69	10 - 120	0	45
Phenanthrene	2.3	F1	0.770	2.58	F1	mg/Kg	✖	31	36 - 120	8	41
Phenol	ND		0.770	0.571	J	mg/Kg	✖	74	10 - 120	7	45
Pyrene	4.6		0.770	1.65	4	mg/Kg	✖	-381	31 - 134	12	43
3 & 4 Methylphenol	ND		0.770	0.603	J	mg/Kg	✖	78	10 - 122	6	45
2-Butoxyethanol	8.5		0.770	13.5	4	mg/Kg	✖	645	10 - 120	4	40

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	98		46 - 137
Phenol-d5 (Surr)	85		26 - 120
Nitrobenzene-d5 (Surr)	76		25 - 120
2-Fluorophenol (Surr)	80		20 - 120
2-Fluorobiphenyl (Surr)	90		34 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-182548-10 MSD

Matrix: Solid

Analysis Batch: 567268

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Prep Type: Total/NA

Prep Batch: 566998

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	116		10 - 120

Lab Sample ID: MB 240-567046/4-A

Matrix: Solid

Analysis Batch: 567114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 567046

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/28/23 13:24	03/29/23 11:37	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/28/23 13:24	03/29/23 11:37	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/28/23 13:24	03/29/23 11:37	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/28/23 13:24	03/29/23 11:37	1
Pyridine	ND		0.0040	0.00036	mg/L		03/28/23 13:24	03/29/23 11:37	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/28/23 13:24	03/29/23 11:37	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/28/23 13:24	03/29/23 11:37	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/28/23 13:24	03/29/23 11:37	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/28/23 13:24	03/29/23 11:37	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/28/23 13:24	03/29/23 11:37	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/28/23 13:24	03/29/23 11:37	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/28/23 13:24	03/29/23 11:37	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	99		46 - 137	03/28/23 13:24	03/29/23 11:37	1
Phenol-d5 (Surr)	63		26 - 120	03/28/23 13:24	03/29/23 11:37	1
Nitrobenzene-d5 (Surr)	75		24 - 120	03/28/23 13:24	03/29/23 11:37	1
2-Fluorophenol (Surr)	71		19 - 120	03/28/23 13:24	03/29/23 11:37	1
2-Fluorobiphenyl (Surr)	89		33 - 120	03/28/23 13:24	03/29/23 11:37	1
2,4,6-Tribromophenol (Surr)	69		10 - 120	03/28/23 13:24	03/29/23 11:37	1

Lab Sample ID: LCS 240-567046/5-A

Matrix: Solid

Analysis Batch: 567114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 567046

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.0800	0.0585		mg/L		73	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0714		mg/L		89	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0546		mg/L		68	51 - 120
2,4-Dinitrotoluene	0.0800	0.0735		mg/L		92	58 - 125
Pyridine	0.160	0.0778		mg/L		49	10 - 120
2-Methylphenol	0.0800	0.0668		mg/L		84	45 - 120
Hexachlorobenzene	0.0800	0.0667		mg/L		83	55 - 120
Hexachlorobutadiene	0.0800	0.0652		mg/L		82	41 - 120
Hexachloroethane	0.0800	0.0606		mg/L		76	39 - 120
Nitrobenzene	0.0800	0.0591		mg/L		74	47 - 120
Pentachlorophenol	0.160	0.109		mg/L		68	19 - 132
3 & 4 Methylphenol	0.0800	0.0569		mg/L		71	40 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	90		46 - 137

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-567046/5-A

Matrix: Solid

Analysis Batch: 567114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 567046

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Phenol-d5 (Surr)	59		26 - 120
Nitrobenzene-d5 (Surr)	77		24 - 120
2-Fluorophenol (Surr)	69		19 - 120
2-Fluorobiphenyl (Surr)	80		33 - 120
2,4,6-Tribromophenol (Surr)	72		10 - 120

Lab Sample ID: 240-182548-12 MS

Matrix: Solid

Analysis Batch: 567114

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Prep Type: TCLP

Prep Batch: 567046

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
1,4-Dichlorobenzene	ND		0.0800	0.0557		mg/L		70	37 - 120
2,4,5-Trichlorophenol	ND		0.0800	0.0623		mg/L		78	25 - 128
2,4,6-Trichlorophenol	ND		0.0800	0.0535		mg/L		67	23 - 122
2,4-Dinitrotoluene	ND		0.0800	0.0709		mg/L		89	27 - 127
Pyridine	ND		0.160	0.0871		mg/L		54	10 - 120
2-Methylphenol	ND		0.0800	0.0631		mg/L		79	22 - 120
Hexachlorobenzene	ND		0.0800	0.0611		mg/L		76	18 - 123
Hexachlorobutadiene	ND		0.0800	0.0607		mg/L		76	10 - 120
Hexachloroethane	ND		0.0800	0.0573		mg/L		72	10 - 120
Nitrobenzene	ND		0.0800	0.0588		mg/L		73	26 - 120
Pentachlorophenol	ND		0.160	0.103		mg/L		64	10 - 132
3 & 4 Methylphenol	ND		0.0800	0.0532		mg/L		67	16 - 123

Surrogate	MS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	89		46 - 137
Phenol-d5 (Surr)	63		26 - 120
Nitrobenzene-d5 (Surr)	71		24 - 120
2-Fluorophenol (Surr)	71		19 - 120
2-Fluorobiphenyl (Surr)	76		33 - 120
2,4,6-Tribromophenol (Surr)	71		10 - 120

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-567051/4-A

Matrix: Solid

Analysis Batch: 567130

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 567051

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	ND		0.0050	0.000047	mg/L		03/28/23 13:28	03/29/23 10:41	1
Endrin	ND		0.00050	0.0000065	mg/L		03/28/23 13:28	03/29/23 10:41	1
Heptachlor	ND		0.00050	0.0000082	mg/L		03/28/23 13:28	03/29/23 10:41	1
Heptachlor epoxide	ND		0.00050	0.0000026	mg/L		03/28/23 13:28	03/29/23 10:41	1
gamma-BHC (Lindane)	ND		0.00050	0.0000025	mg/L		03/28/23 13:28	03/29/23 10:41	1
Methoxychlor	ND		0.0010	0.0000047	mg/L		03/28/23 13:28	03/29/23 10:41	1
Toxaphene	ND		0.020	0.000058	mg/L		03/28/23 13:28	03/29/23 10:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 240-567051/4-A
Matrix: Solid
Analysis Batch: 567130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567051

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	76		10 - 145	03/28/23 13:28	03/29/23 10:41	1
DCB Decachlorobiphenyl	78		10 - 145	03/28/23 13:28	03/29/23 10:41	1
Tetrachloro-m-xylene	69		10 - 123	03/28/23 13:28	03/29/23 10:41	1
Tetrachloro-m-xylene	79		10 - 123	03/28/23 13:28	03/29/23 10:41	1

Lab Sample ID: LCS 240-567051/5-A
Matrix: Solid
Analysis Batch: 567130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567051

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Endrin	0.00100	0.000872		mg/L		87	36 - 120
Heptachlor	0.00100	0.000833		mg/L		83	29 - 120
Heptachlor epoxide	0.00100	0.000841		mg/L		84	36 - 120
gamma-BHC (Lindane)	0.00100	0.000835		mg/L		84	23 - 120
Methoxychlor	0.00100	0.00104		mg/L		104	23 - 140

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	80		10 - 145
DCB Decachlorobiphenyl	85		10 - 145
Tetrachloro-m-xylene	74		10 - 123
Tetrachloro-m-xylene	85		10 - 123

Lab Sample ID: 240-182548-11 MS
Matrix: Solid
Analysis Batch: 567130

Client Sample ID: WC-S. TRACK-SP2-COMP01-05
Prep Type: TCLP
Prep Batch: 567051

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Endrin	ND		0.00100	0.000893		mg/L		89	58 - 120
Heptachlor	ND		0.00100	0.000785		mg/L		78	42 - 120
Heptachlor epoxide	ND		0.00100	0.000832		mg/L		83	54 - 120
gamma-BHC (Lindane)	ND		0.00100	0.000811		mg/L		81	32 - 120
Methoxychlor	ND		0.00100	0.00109		mg/L		109	11 - 159

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	82		10 - 145
DCB Decachlorobiphenyl	82		10 - 145
Tetrachloro-m-xylene	66		10 - 123
Tetrachloro-m-xylene	72		10 - 123

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-567137/1-A
Matrix: Solid
Analysis Batch: 567110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567137

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1016	ND		50	25	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1221	ND		50	30	ug/Kg		03/29/23 09:04	03/29/23 12:17	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 240-567137/1-A
Matrix: Solid
Analysis Batch: 567110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567137

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor-1232	ND		50	21	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1242	ND		50	19	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1248	ND		50	17	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1254	ND		50	21	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1260	ND		50	21	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1262	ND		50	22	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Aroclor-1268	ND		50	16	ug/Kg		03/29/23 09:04	03/29/23 12:17	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Tetrachloro-m-xylene	117		10 - 149				03/29/23 09:04	03/29/23 12:17	1
DCB Decachlorobiphenyl	130		10 - 174				03/29/23 09:04	03/29/23 12:17	1

Lab Sample ID: LCS 240-567137/2-A
Matrix: Solid
Analysis Batch: 567110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567137

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Aroclor-1016	1000	1050		ug/Kg		105	28 - 140
Aroclor-1260	1000	1230		ug/Kg		123	39 - 153
Surrogate			LCS	LCS			
	%Recovery	Qualifier	Result	Qualifier	Limits		
Tetrachloro-m-xylene	118		10 - 149				
DCB Decachlorobiphenyl	129		10 - 174				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-358880/1-A
Matrix: Solid
Analysis Batch: 358964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 358880

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	ND		0.0050	0.0010	mg/L		03/29/23 19:00	03/30/23 06:03	1
2,4-D	ND		0.050	0.016	mg/L		03/29/23 19:00	03/30/23 06:03	1
Surrogate	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136				03/29/23 19:00	03/30/23 06:03	1
2,4-Dichlorophenylacetic acid (Surr)	65		26 - 136				03/29/23 19:00	03/30/23 06:03	1

Lab Sample ID: LCS 410-358880/2-A
Matrix: Solid
Analysis Batch: 358964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358880

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Silvex (2,4,5-TP)	0.00500	0.00438	J	mg/L		88	58 - 148
2,4-D	0.0502	0.0427	J	mg/L		85	42 - 147

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-358880/2-A
Matrix: Solid
Analysis Batch: 358964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 358880

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid (Surr)	73		26 - 136
2,4-Dichlorophenylacetic acid (Surr)	77		26 - 136

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 410-360245/1-A
Matrix: Solid
Analysis Batch: 360597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 360245

Analyte	MB MB		RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,6,7,8-HpCDD	0.122	J	5.0	0.0069	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,4,6,7,8-HpCDF	0.0338	J	5.0	0.00089	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,4,7,8-HxCDD	ND		5.0	0.0030	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,4,7,8-HxCDF	0.0391	J I	5.0	0.0063	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,4,7,8,9-HpCDF	0.0468	J I	5.0	0.0011	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,6,7,8-HxCDD	ND		5.0	0.0028	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,6,7,8-HxCDF	ND		5.0	0.0062	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,7,8-PeCDD	0.0388	J I	5.0	0.0029	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,7,8-PeCDF	ND		5.0	0.0048	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,7,8,9-HxCDD	0.0500	J I	5.0	0.0027	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
1,2,3,7,8,9-HxCDF	0.0766	J	5.0	0.0062	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
2,3,4,6,7,8-HxCDF	0.0445	J	5.0	0.0060	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
2,3,4,7,8-PeCDF	0.0383	J I	5.0	0.0037	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
2,3,7,8-TCDD	0.0120	J I	1.0	0.0042	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
2,3,7,8-TCDF	ND		1.0	0.0028	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
OCDD	0.241	J	10	0.0069	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
OCDF	0.0603	J	10	0.0023	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total HxCDD	0.210	J I	5.0	0.0029	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total HxCDF	0.160	J I	5.0	0.0062	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total HpCDD	0.122	J	5.0	0.0069	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total HpCDF	0.0928	J I	5.0	0.0010	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total PeCDD	0.129	J I	5.0	0.0029	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total PeCDF	0.0851	J I	5.0	0.0043	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total TCDD	0.0567	J I	1.0	0.0042	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Total TCDF	0.0392	J I	1.0	0.0028	ng/Kg		04/03/23 12:06	04/04/23 16:39	1
Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
13C-OCDF	80		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-OCDD	80		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-2,3,7,8-TCDF	60		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-2,3,7,8-TCDD	56		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-2,3,4,7,8-PeCDF	56		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-2,3,4,6,7,8-HxCDF	70		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-1,2,3,7,8,9-HxCDF	77		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-1,2,3,7,8,9-HxCDD	68		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-1,2,3,7,8-PeCDF	53		40 - 135	04/03/23 12:06	04/04/23 16:39	1			
13C-1,2,3,7,8-PeCDD	51		40 - 135	04/03/23 12:06	04/04/23 16:39	1			

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 410-360245/1-A
Matrix: Solid
Analysis Batch: 360597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 360245

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-1,2,3,6,7,8-HxCDF	73		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,6,7,8-HxCDD	68		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,4,7,8,9-HpCDF	77		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,4,7,8-HxCDF	69		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,4,7,8-HxCDD	65		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,4,6,7,8-HpCDF	75		40 - 135	04/03/23 12:06	04/04/23 16:39	1
13C-1,2,3,4,6,7,8-HpCDD	73		40 - 135	04/03/23 12:06	04/04/23 16:39	1

Lab Sample ID: LCS 410-360245/2-A
Matrix: Solid
Analysis Batch: 360597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 360245

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	
						%Rec	Limits
1,2,3,4,6,7,8-HpCDD	100	100		ng/Kg		100	77 - 127
1,2,3,4,6,7,8-HpCDF	100	97.8		ng/Kg		98	77 - 127
1,2,3,4,7,8-HxCDD	100	102		ng/Kg		102	77 - 127
1,2,3,4,7,8-HxCDF	100	104		ng/Kg		104	77 - 129
1,2,3,4,7,8,9-HpCDF	100	103		ng/Kg		103	77 - 127
1,2,3,6,7,8-HxCDD	100	105		ng/Kg		105	76 - 127
1,2,3,6,7,8-HxCDF	100	102		ng/Kg		102	77 - 129
1,2,3,7,8-PeCDD	100	105		ng/Kg		105	77 - 127
1,2,3,7,8-PeCDF	100	108		ng/Kg		108	75 - 129
1,2,3,7,8,9-HxCDD	100	105		ng/Kg		105	76 - 127
1,2,3,7,8,9-HxCDF	100	101		ng/Kg		101	76 - 126
2,3,4,6,7,8-HxCDF	100	101		ng/Kg		101	78 - 128
2,3,4,7,8-PeCDF	100	107		ng/Kg		107	75 - 131
2,3,7,8-TCDD	20.0	20.2		ng/Kg		101	68 - 142
2,3,7,8-TCDF	20.0	21.0		ng/Kg		105	70 - 133
OCDD	200	205		ng/Kg		102	77 - 125
OCDF	200	203		ng/Kg		101	75 - 128

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-OCDF	83		40 - 135
13C-OCDD	83		40 - 135
13C-2,3,7,8-TCDF	69		40 - 135
13C-2,3,7,8-TCDD	67		40 - 135
13C-2,3,4,7,8-PeCDF	70		40 - 135
13C-2,3,4,6,7,8-HxCDF	77		40 - 135
13C-1,2,3,7,8,9-HxCDF	78		40 - 135
13C-1,2,3,7,8,9-HxCDD	75		40 - 135
13C-1,2,3,7,8-PeCDF	68		40 - 135
13C-1,2,3,7,8-PeCDD	64		40 - 135
13C-1,2,3,6,7,8-HxCDF	79		40 - 135
13C-1,2,3,6,7,8-HxCDD	72		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	78		40 - 135
13C-1,2,3,4,7,8-HxCDF	76		40 - 135
13C-1,2,3,4,7,8-HxCDD	74		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	77		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	79		40 - 135

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-567031/2-A
Matrix: Solid
Analysis Batch: 567197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567031

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 14:20	1
Barium	ND		0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 14:20	1
Cadmium	ND		0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 14:20	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 14:20	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 14:20	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 14:20	1
Silver	ND		0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 14:20	1

Lab Sample ID: LCS 240-567031/3-A
Matrix: Solid
Analysis Batch: 567197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Arsenic	2.00	2.17		mg/L		108	50 - 150	
Barium	2.00	1.97		mg/L		98	50 - 150	
Cadmium	1.00	1.03		mg/L		103	50 - 150	
Chromium	1.00	0.987		mg/L		99	50 - 150	
Lead	1.00	0.978		mg/L		98	50 - 150	
Selenium	2.00	2.19		mg/L		110	50 - 150	
Silver	0.100	0.106		mg/L		106	50 - 150	

Lab Sample ID: LB 240-566897/1-B
Matrix: Solid
Analysis Batch: 567197

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 567031

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/28/23 14:00	03/29/23 14:15	1
Barium	0.00229	J	0.50	0.0013	mg/L		03/28/23 14:00	03/29/23 14:15	1
Cadmium	ND		0.050	0.00020	mg/L		03/28/23 14:00	03/29/23 14:15	1
Chromium	ND		0.050	0.0040	mg/L		03/28/23 14:00	03/29/23 14:15	1
Lead	ND		0.050	0.0028	mg/L		03/28/23 14:00	03/29/23 14:15	1
Selenium	ND		0.050	0.0060	mg/L		03/28/23 14:00	03/29/23 14:15	1
Silver	0.000843	J	0.050	0.00062	mg/L		03/28/23 14:00	03/29/23 14:15	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-567033/2-A
Matrix: Solid
Analysis Batch: 567224

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567033

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 12:51	1

Lab Sample ID: LCS 240-567033/3-A
Matrix: Solid
Analysis Batch: 567224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Mercury	0.00500	0.00510		mg/L		102	80 - 120	

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-566897/1-C
 Matrix: Solid
 Analysis Batch: 567224

Client Sample ID: Method Blank
 Prep Type: TCLP
 Prep Batch: 567033

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/28/23 14:00	03/29/23 12:49	1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-182548-2 DU
 Matrix: Solid
 Analysis Batch: 567052

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	83.8		85.7		%		2	20
Percent Moisture	16.2		14.3		%		13	20

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

GC/MS VOA

Composite Batch: 566868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	Composite	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	Composite	

Leach Batch: 566896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	1311	566868
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	1311	566868
LB 240-566896/1-A MB	Method Blank	TCLP	Solid	1311	

Prep Batch: 566928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	5035	
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Total/NA	Solid	5035	
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	5035	
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Total/NA	Solid	5035	
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Total/NA	Solid	5035	
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	5035	
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	5035	
MB 240-566928/1-A	Method Blank	Total/NA	Solid	5035	
LCS 240-566928/2-A	Lab Control Sample	Total/NA	Solid	5035	
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	5035	
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	5035	

Analysis Batch: 566934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	8260D	566928
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Total/NA	Solid	8260D	566928
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	8260D	566928
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Total/NA	Solid	8260D	566928
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Total/NA	Solid	8260D	566928
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8260D	566928
MB 240-566928/1-A	Method Blank	Total/NA	Solid	8260D	566928
LCS 240-566928/2-A	Lab Control Sample	Total/NA	Solid	8260D	566928
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8260D	566928
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8260D	566928

Analysis Batch: 566958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8260D	566896
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8260D	566896
LB 240-566896/1-A MB	Method Blank	TCLP	Solid	8260D	566896
LCS 240-566958/10	Lab Control Sample	Total/NA	Solid	8260D	

Prep Batch: 567049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Total/NA	Solid	5035	
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	5035	
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Total/NA	Solid	5035	
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	5035	
MB 240-567049/1-A	Method Blank	Total/NA	Solid	5035	
MB 240-567049/2-A	Method Blank	Total/NA	Solid	5035	

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

GC/MS VOA

Analysis Batch: 567081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Total/NA	Solid	8260D	567049
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	8260D	567049
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	8260D	566928
MB 240-567049/1-A	Method Blank	Total/NA	Solid	8260D	567049
LCS 240-567081/4	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 567084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Total/NA	Solid	8260D	567049
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	8260D	567049
MB 240-567049/2-A	Method Blank	Total/NA	Solid	8260D	567049
LCS 240-567084/7	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 567279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	8260D	566928
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	8260D	566928

GC/MS Semi VOA

Composite Batch: 566868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	Composite	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	Composite	
240-182548-12 MS	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	Composite	

Leach Batch: 566899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	1311	566868
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	1311	566868
240-182548-12 MS	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	1311	566868

Prep Batch: 566998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Total/NA	Solid	3540C	
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	3540C	
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	3540C	
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Total/NA	Solid	3540C	
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Total/NA	Solid	3540C	
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	3540C	
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Total/NA	Solid	3540C	
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Total/NA	Solid	3540C	
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	3540C	
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	3540C	
MB 240-566998/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-566998/2-A	Lab Control Sample	Total/NA	Solid	3540C	
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	3540C	
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	3540C	

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

GC/MS Semi VOA

Prep Batch: 567046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	3510C	566899
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	3510C	566899
MB 240-567046/4-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-567046/5-A	Lab Control Sample	Total/NA	Solid	3510C	
240-182548-12 MS	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	3510C	566899

Analysis Batch: 567114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8270E	567046
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8270E	567046
MB 240-567046/4-A	Method Blank	Total/NA	Solid	8270E	567046
LCS 240-567046/5-A	Lab Control Sample	Total/NA	Solid	8270E	567046
240-182548-12 MS	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8270E	567046

Analysis Batch: 567268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Total/NA	Solid	8270E	566998
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	8270E	566998
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	8270E	566998
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Total/NA	Solid	8270E	566998
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Total/NA	Solid	8270E	566998
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	8270E	566998
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Total/NA	Solid	8270E	566998
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Total/NA	Solid	8270E	566998
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	8270E	566998
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8270E	566998
MB 240-566998/1-A	Method Blank	Total/NA	Solid	8270E	566998
LCS 240-566998/2-A	Lab Control Sample	Total/NA	Solid	8270E	566998
240-182548-10 MS	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8270E	566998
240-182548-10 MSD	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	8270E	566998

GC Semi VOA

Leach Batch: 358769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	1311	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	1311	

Prep Batch: 358880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8151A	358769
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8151A	358769
MB 410-358880/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 410-358880/2-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 358964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8151A	358880
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8151A	358880
MB 410-358880/1-A	Method Blank	Total/NA	Solid	8151A	358880
LCS 410-358880/2-A	Lab Control Sample	Total/NA	Solid	8151A	358880

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

GC Semi VOA

Composite Batch: 566865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	Composite	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	Composite	

Composite Batch: 566868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	Composite	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	Composite	
240-182548-11 MS	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	Composite	

Leach Batch: 566899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	1311	566868
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	1311	566868
240-182548-11 MS	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	1311	566868

Prep Batch: 567051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	3510C	566899
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	3510C	566899
MB 240-567051/4-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-567051/5-A	Lab Control Sample	Total/NA	Solid	3510C	
240-182548-11 MS	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	3510C	566899

Analysis Batch: 567110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	8082A	567137
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	8082A	567137
MB 240-567137/1-A	Method Blank	Total/NA	Solid	8082A	567137
LCS 240-567137/2-A	Lab Control Sample	Total/NA	Solid	8082A	567137

Analysis Batch: 567130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8081B	567051
240-182548-12	WC-S. TRACK-SP2-COMP06-10	TCLP	Solid	8081B	567051
MB 240-567051/4-A	Method Blank	Total/NA	Solid	8081B	567051
LCS 240-567051/5-A	Lab Control Sample	Total/NA	Solid	8081B	567051
240-182548-11 MS	WC-S. TRACK-SP2-COMP01-05	TCLP	Solid	8081B	567051

Prep Batch: 567137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	3546	566865
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	3546	566865
MB 240-567137/1-A	Method Blank	Total/NA	Solid	3546	
LCS 240-567137/2-A	Lab Control Sample	Total/NA	Solid	3546	

Specialty Organics

Prep Batch: 360245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	HRMS-Soxtherm	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	HRMS-Soxtherm	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Specialty Organics (Continued)

Prep Batch: 360245 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-360245/1-A	Method Blank	Total/NA	Solid	HRMS-Soxtherm	
LCS 410-360245/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Soxtherm	

Analysis Batch: 360597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	8290A	360245
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	8290A	360245
MB 410-360245/1-A	Method Blank	Total/NA	Solid	8290A	360245
LCS 410-360245/2-A	Lab Control Sample	Total/NA	Solid	8290A	360245

Metals

Leach Batch: 566897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	TCLP	Solid	1311	
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	TCLP	Solid	1311	
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	TCLP	Solid	1311	
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	TCLP	Solid	1311	
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	TCLP	Solid	1311	
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	TCLP	Solid	1311	
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	TCLP	Solid	1311	
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	TCLP	Solid	1311	
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	TCLP	Solid	1311	
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	TCLP	Solid	1311	
LB 240-566897/1-B	Method Blank	TCLP	Solid	1311	
LB 240-566897/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 567031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	TCLP	Solid	3010A	566897
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	TCLP	Solid	3010A	566897
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	TCLP	Solid	3010A	566897
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	TCLP	Solid	3010A	566897
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	TCLP	Solid	3010A	566897
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	TCLP	Solid	3010A	566897
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	TCLP	Solid	3010A	566897
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	TCLP	Solid	3010A	566897
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	TCLP	Solid	3010A	566897
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	TCLP	Solid	3010A	566897
LB 240-566897/1-B	Method Blank	TCLP	Solid	3010A	566897
MB 240-567031/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-567031/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 567033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	TCLP	Solid	7470A	566897
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	TCLP	Solid	7470A	566897
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	TCLP	Solid	7470A	566897
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	TCLP	Solid	7470A	566897
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	TCLP	Solid	7470A	566897
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	TCLP	Solid	7470A	566897

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Metals (Continued)

Prep Batch: 567033 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	TCLP	Solid	7470A	566897
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	TCLP	Solid	7470A	566897
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	TCLP	Solid	7470A	566897
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	TCLP	Solid	7470A	566897
LB 240-566897/1-C	Method Blank	TCLP	Solid	7470A	566897
MB 240-567033/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-567033/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 567197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	TCLP	Solid	6010D	567031
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	TCLP	Solid	6010D	567031
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	TCLP	Solid	6010D	567031
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	TCLP	Solid	6010D	567031
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	TCLP	Solid	6010D	567031
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	TCLP	Solid	6010D	567031
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	TCLP	Solid	6010D	567031
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	TCLP	Solid	6010D	567031
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	TCLP	Solid	6010D	567031
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	TCLP	Solid	6010D	567031
LB 240-566897/1-B	Method Blank	TCLP	Solid	6010D	567031
MB 240-567031/2-A	Method Blank	Total/NA	Solid	6010D	567031
LCS 240-567031/3-A	Lab Control Sample	Total/NA	Solid	6010D	567031

Analysis Batch: 567224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	TCLP	Solid	7470A	567033
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	TCLP	Solid	7470A	567033
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	TCLP	Solid	7470A	567033
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	TCLP	Solid	7470A	567033
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	TCLP	Solid	7470A	567033
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	TCLP	Solid	7470A	567033
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	TCLP	Solid	7470A	567033
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	TCLP	Solid	7470A	567033
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	TCLP	Solid	7470A	567033
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	TCLP	Solid	7470A	567033
LB 240-566897/1-C	Method Blank	TCLP	Solid	7470A	567033
MB 240-567033/2-A	Method Blank	Total/NA	Solid	7470A	567033
LCS 240-567033/3-A	Lab Control Sample	Total/NA	Solid	7470A	567033

General Chemistry

Composite Batch: 566865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	Composite	
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	Composite	

Analysis Batch: 567052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-1	WC-S. TRACK-SP2-01 (2-3')	Total/NA	Solid	Moisture	
240-182548-2	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	Moisture	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

General Chemistry (Continued)

Analysis Batch: 567052 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182548-3	WC-S. TRACK-SP2-03 (4-5')	Total/NA	Solid	Moisture	
240-182548-4	WC-S. TRACK-SP2-04 (4-5')	Total/NA	Solid	Moisture	
240-182548-5	WC-S. TRACK-SP2-05 (6-7')	Total/NA	Solid	Moisture	
240-182548-6	WC-S. TRACK-SP2-06 (2-3')	Total/NA	Solid	Moisture	
240-182548-7	WC-S. TRACK-SP2-07 (3-4')	Total/NA	Solid	Moisture	
240-182548-8	WC-S. TRACK-SP2-08 (7-8')	Total/NA	Solid	Moisture	
240-182548-9	WC-S. TRACK-SP2-09 (9-10')	Total/NA	Solid	Moisture	
240-182548-10	WC-S. TRACK-SP2-10 (5-6')	Total/NA	Solid	Moisture	
240-182548-11	WC-S. TRACK-SP2-COMP01-05	Total/NA	Solid	Moisture	566865
240-182548-12	WC-S. TRACK-SP2-COMP06-10	Total/NA	Solid	Moisture	566865
240-182548-2 DU	WC-S. TRACK-SP2-02 (2-3')	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 14:58
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:07
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-01 (2-3')

Lab Sample ID: 240-182548-1

Date Collected: 03/24/23 11:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			567049	LAM	EET CAN	03/26/23 12:51
Total/NA	Analysis	8260D		1	567081	CS	EET CAN	03/29/23 02:22
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		2	567268	MRU	EET CAN	03/30/23 09:43

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:03
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:10
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-02 (2-3')

Lab Sample ID: 240-182548-2

Date Collected: 03/24/23 11:11

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			567049	LAM	EET CAN	03/26/23 12:51
Total/NA	Analysis	8260D		1	567081	CS	EET CAN	03/29/23 02:47
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		50	567268	MRU	EET CAN	03/30/23 10:06

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:08
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:12
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-03 (4-5')

Lab Sample ID: 240-182548-3

Date Collected: 03/24/23 11:22

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 81.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		100	566934	TJL2	EET CAN	03/28/23 10:25
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	567279	TJL2	EET CAN	03/30/23 19:08
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		4	567268	MRU	EET CAN	03/30/23 12:22

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:12
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:14
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-04 (4-5')

Lab Sample ID: 240-182548-4

Date Collected: 03/24/23 11:38

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	566934	TJL2	EET CAN	03/28/23 12:11
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		4	567268	MRU	EET CAN	03/30/23 12:45

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:17
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:16
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-05 (6-7')

Lab Sample ID: 240-182548-5

Date Collected: 03/24/23 11:50

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 85.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			567049	LAM	EET CAN	03/26/23 12:51
Total/NA	Analysis	8260D		1	567084	TJL2	EET CAN	03/29/23 12:33
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		4	567268	MRU	EET CAN	03/30/23 13:08

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:21
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:18
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-06 (2-3')

Lab Sample ID: 240-182548-6

Date Collected: 03/24/23 12:05

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	567081	CS	EET CAN	03/29/23 08:39
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		20	566934	TJL2	EET CAN	03/28/23 10:46
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		5	567268	MRU	EET CAN	03/30/23 12:00

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:26
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:20
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-07 (3-4')

Lab Sample ID: 240-182548-7

Date Collected: 03/24/23 12:13

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	566934	TJL2	EET CAN	03/28/23 12:33
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		4	567268	MRU	EET CAN	03/30/23 13:31

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:31
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:22
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-08 (7-8')

Lab Sample ID: 240-182548-8

Date Collected: 03/24/23 13:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	566934	TJL2	EET CAN	03/28/23 12:54
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		50	567268	MRU	EET CAN	03/30/23 10:29

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:44
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:29
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-09 (9-10')

Lab Sample ID: 240-182548-9

Date Collected: 03/24/23 13:25

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			567049	LAM	EET CAN	03/26/23 12:51
Total/NA	Analysis	8260D		1	567084	TJL2	EET CAN	03/29/23 12:54
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	567279	TJL2	EET CAN	03/30/23 17:21
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		4	567268	MRU	EET CAN	03/30/23 13:53

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3010A			567031	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	6010D		1	567197	RKT	EET CAN	03/29/23 15:48
TCLP	Leach	1311			566897	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	7470A			567033	AJC	EET CAN	03/28/23 14:00
TCLP	Analysis	7470A		1	567224	MRL	EET CAN	03/29/23 13:31
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-10 (5-6')

Lab Sample ID: 240-182548-10

Date Collected: 03/24/23 13:40

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			566928	LAM	EET CAN	03/27/23 18:16
Total/NA	Analysis	8260D		1	566934	TJL2	EET CAN	03/28/23 11:08
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		10	567268	MRU	EET CAN	03/30/23 10:51

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566896	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Analysis	8260D		1	566958	HMB	EET CAN	03/28/23 14:03
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566899	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3510C			567046	SDE	EET CAN	03/28/23 13:24
TCLP	Analysis	8270E		1	567114	TMH	EET CAN	03/29/23 15:58
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566899	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3510C			567051	SDE	EET CAN	03/28/23 13:28
TCLP	Analysis	8081B		1	567130	BPM	EET CAN	03/29/23 11:12
TCLP	Leach	1311			358769	UNWS	ELLE	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	8151A			358880	K2IL	ELLE	03/29/23 19:00
TCLP	Analysis	8151A		1	358964	UAMZ	ELLE	03/30/23 17:21
Total/NA	Composite	Composite			566865	DRJ	EET CAN	03/27/23 11:49
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-COMP01-05

Lab Sample ID: 240-182548-11

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566865	DRJ	EET CAN	03/27/23 11:49
Total/NA	Prep	3546			567137	BMB	EET CAN	03/29/23 09:04
Total/NA	Analysis	8082A		1	567110	MBB	EET CAN	03/29/23 15:58
Total/NA	Prep	HRMS-Soxtherm			360245	RGA5	ELLE	04/03/23 12:06
Total/NA	Analysis	8290A		1	360597	DZ6A	ELLE	04/05/23 03:25

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566896	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Analysis	8260D		1	566958	HMB	EET CAN	03/28/23 14:26
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566899	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3510C			567046	SDE	EET CAN	03/28/23 13:24
TCLP	Analysis	8270E		1	567114	TMH	EET CAN	03/29/23 16:24
TCLP	Composite	Composite			566868	DRJ	EET CAN	03/27/23 11:52
TCLP	Leach	1311			566899	DRJ	EET CAN	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	3510C			567051	SDE	EET CAN	03/28/23 13:28
TCLP	Analysis	8081B		1	567130	BPM	EET CAN	03/29/23 11:43

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			358769	UNWS	ELLE	03/27/23 16:00 - 03/28/23 08:20 ¹
TCLP	Prep	8151A			358880	K2IL	ELLE	03/29/23 19:00
TCLP	Analysis	8151A		1	358964	UAMZ	ELLE	03/30/23 17:55
Total/NA	Composite	Composite			566865	DRJ	EET CAN	03/27/23 11:49
Total/NA	Analysis	Moisture		1	567052	MS	EET CAN	03/28/23 14:26

Client Sample ID: WC-S. TRACK-SP2-COMP06-10

Lab Sample ID: 240-182548-12

Date Collected: 03/24/23 00:00

Matrix: Solid

Date Received: 03/25/23 18:35

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Composite	Composite			566865	DRJ	EET CAN	03/27/23 11:49
Total/NA	Prep	3546			567137	BMB	EET CAN	03/29/23 09:04
Total/NA	Analysis	8082A		1	567110	MBB	EET CAN	03/29/23 16:14
Total/NA	Prep	HRMS-Soxtherm			360245	RGA5	ELLE	04/03/23 12:06
Total/NA	Analysis	8290A		1	360597	DZ6A	ELLE	04/05/23 04:14

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182548-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	03-31-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

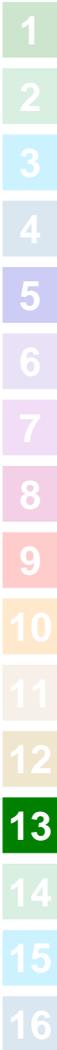
Job ID: 240-182548-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23 *
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Address: 180 Van Buren Ave
 Baraborton, OH 44203-3543
 ET Gantner 330-491-9396

1.9/20 2.4/22 1.0/23
Chain of Custody Record

645693

eurofins
 Environment Testing
 America

TAL-9210

Regulatory Program: DW NPDES RCRA Other: CERCLA

Client Contact		Project Manager: Jason Artrip		Site Contact:		Date: 3/24/23		COC No: 1 of 1	
Company Name: Arcadis		Tel/E-mail: Jason.Artrip@arcadis.com		Carrier: Courier		Sampler: Michelle Clayton		COCs	
Address: 4665 Cornell Rd Ste 200		Analysis Turnaround Time		For Lab Use Only:		Walk-in Client:			
City/State/Zip: Cincinnati, OH 45241		TAT if different from Below		Total VOC		Lab Sampling:			
Phone: 513-860-8700		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Total SVOC		Job / SDG No.:			
Fax:		2 weeks		Total PCBs					
Project Name: East Palestine Train Derailment		1 week		Total Metals					
Site: East Palestine, OH		2 days		Total SVOC					
PO# 24030745		1 day		Total VOC					
Sample Identification		Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:
WC-S.Track - SP2-01 (2-3)		3/24/23	11:00	G	S	9	N	N	
WC-S.Track - SP2-02 (2-3)		3/24/23	11:11	G	S	9	N	N	
WC-S.Track - SP2-03 (4-5)		3/24/23	11:22	G	S	9	N	N	
WC-S.Track - SP2-04 (4-5)		3/24/23	11:38	G	S	9	N	N	
WC-S.Track - SP2-05 (6-7)		3/24/23	11:50	G	S	9	N	N	
WC-S.Track - SP2-06 (2-3)		3/24/23	12:05	G	S	9	N	N	
WC-S.Track - SP2-07 (3-4)		3/24/23	12:13	G	S	9	N	N	
WC-S.Track - SP2-08 (7-8)		3/24/23	13:00	G	S	9	N	N	
WC-S.Track - SP2-09 (9-10)		3/24/23	13:25	G	S	9	N	N	
WC-S.Track - SP2-10 (5-6)		3/24/23	13:40	G	S	9	N	N	
WC-S.Track - SP2-Composite-05		3/24	-	C	S	0			Lab to generate 5 pr composite
WC-S.Track - SP2-Composite-10		3/24	-	C	S	0			Lab to generate 5 pr composite



Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments: 043 Wmichow.de - listed

Relinquished by:	Company:	Date/Time:	Relinquished by:	Company:	Date/Time:	Relinquished by:	Company:	Date/Time:
<i>Jason Artrip</i>	Arcadis	3/24/23 17:00	<i>Jason Artrip</i>	Arcadis	3/24/23 17:30			
<i>Jason Artrip</i>	Arcadis	3/25/23 17:00	<i>Jason Artrip</i>	Arcadis	3/25/23 17:03			
<i>Jason Artrip</i>	Arcadis	3/25/23 18:35	<i>Jason Artrip</i>	Arcadis	3/25/23 18:35			



**Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility**

Login # : 182548

Client Acadis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 3-23-23 Opened on 3-27-23

RAW

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # _____ (CF _____ °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC293086**

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes  Larger than this. Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Address: 180 Van Buren Ave
Bartolotta, OH 44203-3543
ET Bartolotta 330-491-9396

Company Name: Arcadis
Address: 4665 Cornell Rd Ste 200
City/State/Zip: Cincinnati, OH 45241
Phone: 513-860-8700
Fax: LM 3/29/23

Project Name: East Palestine Train Derailment
Site: East Palestine, OH
PO# 24030745

Client Contact

Regulatory Program: DW NPDES RCRA Other: CERCLA

Project Manager: Jason Artrip
Tel/Email: Jason.Artrip@arcadis.com
Analysis Turnaround Time: RUSH

Site Contact: LM 3/29/23 Date: 3/24/23
Carrier: Courier

CO# No: LM 3/29/23 of 1 COCS
Sampler: Michelle Clayton
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Total VOC	Total PCBs	Total SVOC	TLR Metals	TLR VOC	TLR STOC	TLR PEST/Herbs	Diurnal/Evaporant	Carrier	Date	CO# No
WC-S Track - SP2-01 (2-3)	3/24/23	11:00	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-02 (2-3)	3/24/23	11:11	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-03 (4-5)	3/24/23	11:22	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-04 (4-5)	3/24/23	11:38	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-05 (6-7)	3/24/23	11:50	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-06 (2-3)	3/24/23	12:05	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-07 (3-4)	3/24/23	12:13	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-08 (7-8)	3/24/23	13:00	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-09 (9-10)	3/24/23	13:25	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-10 (5-6)	3/24/23	13:40	G	S	9	N	N	X	X	X	X	X	X	X			3/24/23	LM 3/29/23
WC-S Track - SP2-Comp01-05	3/24	-	C	S	0													
WC-S Track - SP2-Composite-10	3/24	-	C	S	0													



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Methanol

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
U043 (unidentified - listed)

Special Instructions/QC Requirements & Comments: LM 3/29/23

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Relinquished by:	Company:	Date/Time:	Relinquished by:	Company:	Date/Time:	Relinquished by:	Company:	Date/Time:
<i>[Signature]</i>	Arcadis	3/24/23 17:30	Received by:	Arcadis	17:30			
<i>[Signature]</i>	Arcadis	3/25/23 17:00	Received by:	Eurofins	3:25:23			17:03
<i>[Signature]</i>	Arcadis	3/25/23 18:35	Received by:	EETNC	3-25-23 18:35			18:35



**Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility**

Login # : 182548

Client Acadis Site Name NSRR-ER

Cooler unpacked by:

Cooler Received on 3-23-23 Opened on 3-27-23

DAW

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # _____ (CF _____ °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC293086**

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins Canton

180 S. Van Buren Avenue
 Barberton, OH 44203
 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler: DelMonico, Michael		Lab PM: DelMonico, Michael		Carrier Tracking No(s):		COC No: 240-165511.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Michael.DelMonico@et.eurofinsus.com		State of Origin: Ohio		Page: Page 1 of 1			
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note):				Job #: 240-182548-1			
Address: 2425 New Holland Pike.		Due Date Requested: 4/3/2023		Analysis Requested Field Filtered Sample (Yes or No) Form MS/MSD (Yes or No) 8290A/HRMS_Soxdim_P 8290 17 + Totals 8151A/1311_T TCLP Herbicides						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
City: Lancaster		TAT Requested (days):									
State, Zip: PA, 17601		PO #:									
Phone: 717-656-2300(Tel)		WO #:									
Email:		Project #: 24030745									
Project Name: NS East Palestine		SSOW#:		Site:		Project #:		SSOW#:			
Site:		Project #:		SSOW#:		Project #:		SSOW#:			
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	MATRIX (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Form MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:		
WC-S. TRACK-SP2-COMP01-05 (240-182548-11)		3/24/23	Eastern	Solid		X	X	1			
WC-S. TRACK-SP2-COMP06-10 (240-182548-12)		3/24/23	Eastern	Solid		X	X	1			
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.											
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:						
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: [Signature]		Date/Time: 3/27/23 1545		Company: EESTAC		Received by: [Signature]		Date/Time: [Signature]			
Relinquished by: [Signature]		Date/Time:		Company:		Received by: [Signature]		Date/Time: [Signature]			
Relinquished by: [Signature]		Date/Time:		Company:		Received by: [Signature]		Date/Time: 3/28/23 0945			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2-1							

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Eurofins Canton

180 S. Van Buren Avenue
 Barberton, OH 44203
 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



Client Information (Sub Contract Lab)				Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving				Phone:	DelMonico, Michael	E-Mail:	240-165545.1
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note):			Page: Page 1 of 1
Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:				Due Date Requested: 4/3/2023	Analysis Requested		Preservation Codes:
Project Name: NS East Palestine				TAT Requested (days):	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 8290A/HRMS_Soxtim_P 8290 17 + Totals 8151A/1311_T TCLP Herbicides 8151A/8151A_AP TCLP Herbicides		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)
Site:				PO #:			Total Number of containers
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)
Preservation Code:							
WC-S. TRACK-SP2-COMP01-05 (240-182548-11)				3/24/23	Eastern	Solid	
WC-S. TRACK-SP2-COMP06-10 (240-182548-12)				3/24/23	Eastern	Solid	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: [Signature]	Date/Time: 3/28/23 1440	Company: [Signature]	Received by: [Signature]
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by: [Signature]

Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.2
---	-------------------	---

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 240-182548-1

Login Number: 182548

List Number: 2

Creator: McBeth, Jessica

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Creation: 03/28/23 12:24 PM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182548-1

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OCDF (40-135)	OCDD (40-135)	TCDF (40-135)	TCDD (40-135)	PeCF (40-135)	13CHxCF (40-135)	HxCF (40-135)	13CHxCD (40-135)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	75	74	83	76	77	73	71	71
240-182548-12	WC-S. TRACK-SP2-COMP06-10	78	79	67	67	67	75	75	76
LCS 410-360245/2-A	Lab Control Sample	83	83	69	67	70	77	78	75
MB 410-360245/1-A	Method Blank	80	80	60	56	56	70	77	68

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PeCDF (40-135)	PeCDD (40-135)	HxDF (40-135)	HxDD (40-135)	HpCDF2 (40-135)	HxCDF (40-135)	HxCDD (40-135)	HpCDF (40-135)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	75	70	83	71	73	88	70	72
240-182548-12	WC-S. TRACK-SP2-COMP06-10	66	63	77	73	76	74	72	75
LCS 410-360245/2-A	Lab Control Sample	68	64	79	72	78	76	74	77
MB 410-360245/1-A	Method Blank	53	51	73	68	77	69	65	75

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDD (40-135)
240-182548-11	WC-S. TRACK-SP2-COMP01-05	71
240-182548-12	WC-S. TRACK-SP2-COMP06-10	74
LCS 410-360245/2-A	Lab Control Sample	79
MB 410-360245/1-A	Method Blank	73

Surrogate Legend

- OCDF = 13C-OCDF
- OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- TCDD = 13C-2,3,7,8-TCDD
- PeCF = 13C-2,3,4,7,8-PeCDF
- 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
- HxCF = 13C-1,2,3,7,8,9-HxCDF
- 13CHxCD = 13C-1,2,3,7,8,9-HxCDD
- PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- HxDF = 13C-1,2,3,6,7,8-HxCDF
- HxDD = 13C-1,2,3,6,7,8-HxCDD
- HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
- HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDD = 13C-1,2,3,4,7,8-HxCDD
- HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- HpCDD = 13C-1,2,3,4,6,7,8-HpCDD

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/31/2023 7:51:16 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182577-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/31/2023 7:51:16 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	10
Surrogate Summary	16
QC Sample Results	17
QC Association Summary	28
Lab Chronicle	30
Certification Summary	31
Chain of Custody	32

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
⌘	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Job ID: 240-182577-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182577-1

Comments

No additional comments.

Receipt

The samples were received on 3/27/2023 6:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

GC/MS VOA

Method 5035: The following sample was received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results: WC-S. TRACK-SP2E-01 (2-3') (240-182577-1).

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-567084 was outside the method criteria for the following analytes: 1,2-Dibromo-3-Chloropropane and Dichloro-difluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes are considered estimated.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-567049 and analytical batch 240-567084.

Method 8260D: The laboratory control sample (LCS) for preparation batch 240-567049 and analytical batch 240-567084 recovered outside control limits for the following analyte: Acetone. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The following sample was preserved via freezing on 3-27-22 at 20:20pm: WC-S. TRACK-SP2E-01 (2-3') (240-182577-1). This is outside the 48 hour time frame required by the method.

Method 8260D: The method blank for 240-567049 contained Acetone above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated sample was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260D: The following sample was received with insufficient time remaining to freeze within 48 hours, as required for samples collected in water preserved TerraCores: WC-S. TRACK-SP2E-01 (2-3') (240-182577-1). The sample was collected on 3/25/2023 at 4:10 PM. The sample was received on 3/27/2023 at 6:30 PM and placed in the freezer on 3/27/2023 at 8:20 PM.

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: WC-S. TRACK-SP2E-01 (2-3') (240-182577-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-567268 recovered above the upper control limit for 2-Nitrophenol. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The following sample is impacted: WC-S. TRACK-SP2E-01 (2-3') (240-182577-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Job ID: 240-182577-1 (Continued)

Laboratory: Eurofins Canton (Continued)

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
Moisture	Percent Moisture	EPA	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3540C	Soxhlet Extraction	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
5035	Closed System Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Solid	03/25/23 16:10	03/27/23 18:30
240-182577-2	TRIP BLANK	Water	03/24/23 00:00	03/27/23 18:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	0.11	J	0.22	0.095	mg/Kg	12.5	✳	8270E	Total/NA
Phenanthrene	0.064	J	0.22	0.033	mg/Kg	12.5	✳	8270E	Total/NA
Arsenic	0.0068	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.11	J	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.0033	J	0.050	0.00020	mg/L	1		6010D	TCLP

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182577-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Percent Solids: 85.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H H3	0.0035	0.0012	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,1,2,2-Tetrachloroethane	ND	H H3	0.0035	0.00099	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H H3	0.0035	0.00089	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,1,2-Trichloroethane	ND	H H3	0.0035	0.00078	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,1-Dichloroethane	ND	H H3	0.0035	0.00048	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,1-Dichloroethene	ND	H H3	0.0035	0.0013	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,2,4-Trichlorobenzene	ND	H H3	0.0035	0.0017	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,2-Dibromo-3-Chloropropane	ND	H H3	0.0069	0.0025	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Ethylene Dibromide	ND	H H3	0.0035	0.00053	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,2-Dichlorobenzene	ND	H H3	0.0035	0.00077	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,2-Dichloroethane	ND	H H3	0.0035	0.00053	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,2-Dichloropropane	ND	H H3	0.0035	0.00059	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,3-Dichlorobenzene	ND	H H3	0.0035	0.00056	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
1,4-Dichlorobenzene	ND	H H3	0.0035	0.00061	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
2-Butanone (MEK)	ND	H H3	0.014	0.0025	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
2-Hexanone	ND	H H3	0.014	0.0028	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
4-Methyl-2-pentanone (MIBK)	ND	H H3	0.014	0.0026	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Acetone	ND	H H3 *+	0.017	0.015	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Benzene	ND	H H3	0.0035	0.00048	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Dichlorobromomethane	ND	H H3	0.0035	0.0010	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Bromoform	ND	H H3	0.0035	0.0017	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Bromomethane	ND	H H3	0.0035	0.0029	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Carbon disulfide	ND	H H3	0.0035	0.00080	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Carbon tetrachloride	ND	H H3	0.0035	0.0022	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Chlorobenzene	ND	H H3	0.0035	0.00063	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Chloroethane	ND	H H3	0.0035	0.0019	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Chloroform	ND	H H3	0.0035	0.00054	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Chloromethane	ND	H H3	0.0035	0.0016	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
cis-1,2-Dichloroethene	ND	H H3	0.0035	0.0010	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
cis-1,3-Dichloropropene	ND	H H3	0.0035	0.0020	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Cyclohexane	ND	H H3	0.0069	0.00095	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Chlorodibromomethane	ND	H H3	0.0035	0.0019	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Dichlorodifluoromethane	ND	H H3	0.0035	0.00065	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Ethylbenzene	ND	H H3	0.0035	0.00072	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Isopropylbenzene	ND	H H3	0.0035	0.0013	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Methyl acetate	ND	H H3	0.017	0.0023	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Methyl tert-butyl ether	ND	H H3	0.0035	0.0014	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Methylcyclohexane	ND	H H3	0.0069	0.00085	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Methylene Chloride	ND	H H3	0.017	0.0083	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Styrene	ND	H H3	0.0035	0.00080	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Tetrachloroethene	ND	H H3	0.0035	0.00050	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Toluene	ND	H H3	0.0035	0.00053	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
trans-1,2-Dichloroethene	ND	H H3	0.0035	0.00098	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
trans-1,3-Dichloropropene	ND	H H3	0.0035	0.0026	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Trichloroethene	ND	H H3	0.0035	0.00044	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Trichlorofluoromethane	ND	H H3	0.0035	0.0019	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Vinyl chloride	ND	H H3	0.0035	0.0012	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1
Xylenes, Total	ND	H H3	0.0069	0.0011	mg/Kg	✱	03/27/23 20:20	03/29/23 13:15	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Percent Solids: 85.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	121		56 - 125	03/27/23 20:20	03/29/23 04:02	1
Toluene-d8 (Surr)	80		56 - 125	03/27/23 20:20	03/29/23 13:15	1
Dibromofluoromethane (Surr)	100		41 - 138	03/27/23 20:20	03/29/23 04:02	1
Dibromofluoromethane (Surr)	85		41 - 138	03/27/23 20:20	03/29/23 13:15	1
4-Bromofluorobenzene (Surr)	131		41 - 143	03/27/23 20:20	03/29/23 04:02	1
4-Bromofluorobenzene (Surr)	73		41 - 143	03/27/23 20:20	03/29/23 13:15	1
1,2-Dichloroethane-d4 (Surr)	126	S1+	58 - 125	03/27/23 20:20	03/29/23 04:02	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/27/23 20:20	03/29/23 13:15	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.73	0.25	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
bis (2-chloroisopropyl) ether	ND		1.5	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4,5-Trichlorophenol	ND		2.2	1.0	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4,6-Trichlorophenol	ND		2.2	0.94	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4-Dichlorophenol	ND		2.2	0.64	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4-Dimethylphenol	ND		2.2	0.59	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4-Dinitrophenol	ND		4.8	2.1	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,4-Dinitrotoluene	ND		2.9	0.91	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2,6-Dinitrotoluene	ND		2.9	0.82	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Chloronaphthalene	ND		0.73	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Chlorophenol	ND		0.73	0.15	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Methylnaphthalene	ND		0.22	0.029	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Methylphenol	ND		2.9	0.45	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Nitroaniline	ND		2.9	0.59	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
2-Nitrophenol	ND		0.73	0.19	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
3,3'-Dichlorobenzidine	ND		1.5	0.63	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
3-Nitroaniline	ND		2.9	0.72	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4,6-Dinitro-2-methylphenol	ND		4.8	1.2	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Bromophenyl phenyl ether	ND		0.73	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Chloro-3-methylphenol	ND		2.2	0.66	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Chloroaniline	ND		2.2	0.44	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Chlorophenyl phenyl ether	ND		0.73	0.21	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Nitroaniline	ND		2.9	0.88	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
4-Nitrophenol	ND		4.8	1.4	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Acenaphthene	ND		0.22	0.042	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Acenaphthylene	ND		0.22	0.059	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Acetophenone	ND		1.5	0.16	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Anthracene	ND		0.22	0.035	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Atrazine	ND		2.9	0.53	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzaldehyde	ND		1.5	0.34	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzo[a]anthracene	ND		0.22	0.050	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzo[a]pyrene	ND		0.22	0.14	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzo[b]fluoranthene	0.11	J	0.22	0.095	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzo[g,h,i]perylene	ND		0.22	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Benzo[k]fluoranthene	ND		0.22	0.10	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Bis(2-chloroethoxy)methane	ND		1.5	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Bis(2-chloroethyl)ether	ND		1.5	0.18	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Bis(2-ethylhexyl) phthalate	ND		1.0	0.75	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5
Butyl benzyl phthalate	ND		1.0	0.32	mg/Kg	☼	03/28/23 10:04	03/30/23 14:16	12.5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Percent Solids: 85.6

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		4.8	1.1	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Carbazole	ND		0.73	0.28	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Chrysene	ND		0.22	0.022	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Dibenz(a,h)anthracene	ND		0.22	0.10	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Dibenzofuran	ND		0.73	0.19	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Diethyl phthalate	ND		1.0	0.45	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Dimethyl phthalate	ND		1.0	0.21	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Di-n-butyl phthalate	ND		1.0	0.74	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Di-n-octyl phthalate	ND		1.0	0.41	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Fluoranthene	ND		0.22	0.065	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Fluorene	ND		0.22	0.040	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Hexachlorobenzene	ND		0.22	0.042	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Hexachlorobutadiene	ND		0.73	0.18	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Hexachlorocyclopentadiene	ND		4.8	0.91	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Hexachloroethane	ND		0.73	0.13	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Indeno[1,2,3-cd]pyrene	ND		0.22	0.11	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Isophorone	ND		0.73	0.18	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
N-Nitrosodi-n-propylamine	ND		0.73	0.16	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
N-Nitrosodiphenylamine	ND		0.73	0.18	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Naphthalene	ND		0.22	0.035	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Nitrobenzene	ND		1.5	0.19	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Pentachlorophenol	ND		2.2	0.85	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Phenanthrene	0.064	J	0.22	0.033	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Phenol	ND		0.73	0.12	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
Pyrene	ND		0.22	0.031	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5
3 & 4 Methylphenol	ND		5.9	0.42	mg/Kg	☆	03/28/23 10:04	03/30/23 14:16	12.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	03/28/23 10:04	03/30/23 14:16	12.5
Phenol-d5 (Surr)	73		26 - 120	03/28/23 10:04	03/30/23 14:16	12.5
Nitrobenzene-d5 (Surr)	63		25 - 120	03/28/23 10:04	03/30/23 14:16	12.5
2-Fluorophenol (Surr)	67		20 - 120	03/28/23 10:04	03/30/23 14:16	12.5
2-Fluorobiphenyl (Surr)	77		34 - 120	03/28/23 10:04	03/30/23 14:16	12.5
2,4,6-Tribromophenol (Surr)	113		10 - 120	03/28/23 10:04	03/30/23 14:16	12.5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0068	J	0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 13:32	1
Barium	0.11	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 13:32	1
Cadmium	0.0033	J	0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 13:32	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 13:32	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 13:32	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 13:32	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 13:32	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 12:28	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Percent Solids: 85.6

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	85.6		0.1	0.1	%			03/29/23 15:08	1
Percent Moisture (EPA Moisture)	14.4		0.1	0.1	%			03/29/23 15:08	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182577-2

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/27/23 18:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 16:02	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 16:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 16:02	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 16:02	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 16:02	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 16:02	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 16:02	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 16:02	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 16:02	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 16:02	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 16:02	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 16:02	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 16:02	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 16:02	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/28/23 16:02	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 16:02	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 16:02	1
Acetone	ND		0.010	0.0054	mg/L			03/28/23 16:02	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 16:02	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 16:02	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 16:02	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 16:02	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 16:02	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 16:02	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 16:02	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 16:02	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 16:02	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 16:02	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 16:02	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 16:02	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 16:02	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 16:02	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 16:02	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 16:02	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 16:02	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 16:02	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 16:02	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 16:02	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 16:02	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 16:02	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 16:02	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 16:02	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 16:02	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 16:02	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 16:02	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 16:02	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/28/23 16:02	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/28/23 16:02	1
Butyl acrylate	ND		0.010	0.0023	mg/L			03/28/23 16:02	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182577-2

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/27/23 18:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/28/23 16:02	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/28/23 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	97		78 - 122		03/28/23 16:02	1
<i>Dibromofluoromethane (Surr)</i>	106		73 - 120		03/28/23 16:02	1
<i>4-Bromofluorobenzene (Surr)</i>	94		56 - 136		03/28/23 16:02	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		62 - 137		03/28/23 16:02	1



Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (56-125)	DBFM (41-138)	BFB (41-143)	DCA (58-125)
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	121	100	131	126 S1+
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	80	85	73	87
LCS 240-567081/4	Lab Control Sample	122	109	120	118
LCS 240-567084/7	Lab Control Sample	80	82	74	81
MB 240-567049/1-A	Method Blank	120	101	122	118
MB 240-567049/2-A	Method Blank	74	88	61	87

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-182577-2	TRIP BLANK	97	106	94	103
LCS 240-567011/5	Lab Control Sample	105	105	103	98
LCS 240-567011/6	Lab Control Sample	98	105	104	101
MB 240-567011/8	Method Blank	99	108	95	101

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (25-120)	2FP (20-120)	FBP (34-120)	TBP (10-120)
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	106	73	63	67	77	113
LCS 240-566998/2-A	Lab Control Sample	116	78	72	77	84	112
MB 240-566998/1-A	Method Blank	122	78	75	72	89	54

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-567011/8
 Matrix: Water
 Analysis Batch: 567011

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 15:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 15:15	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 15:15	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 15:15	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 15:15	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/28/23 15:15	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 15:15	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 15:15	1
Acetone	ND		0.010	0.0054	mg/L			03/28/23 15:15	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 15:15	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 15:15	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 15:15	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 15:15	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 15:15	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 15:15	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 15:15	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 15:15	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 15:15	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 15:15	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 15:15	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 15:15	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 15:15	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 15:15	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 15:15	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 15:15	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 15:15	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/28/23 15:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567011/8
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		0.010	0.0023	mg/L			03/28/23 15:15	1
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/28/23 15:15	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/28/23 15:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		78 - 122		03/28/23 15:15	1
Dibromofluoromethane (Surr)	108		73 - 120		03/28/23 15:15	1
4-Bromofluorobenzene (Surr)	95		56 - 136		03/28/23 15:15	1
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		03/28/23 15:15	1

Lab Sample ID: LCS 240-567011/5
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0244		mg/L		97	64 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0287		mg/L		115	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0254		mg/L		102	51 - 146
1,1,2-Trichloroethane	0.0250	0.0257		mg/L		103	70 - 138
1,1-Dichloroethane	0.0250	0.0239		mg/L		95	72 - 127
1,1-Dichloroethene	0.0250	0.0264		mg/L		106	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0264		mg/L		105	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0248		mg/L		99	53 - 135
Ethylene Dibromide	0.0250	0.0255		mg/L		102	71 - 134
1,2-Dichlorobenzene	0.0250	0.0268		mg/L		107	78 - 120
1,2-Dichloroethane	0.0250	0.0235		mg/L		94	66 - 128
1,2-Dichloropropane	0.0250	0.0249		mg/L		99	75 - 133
1,3-Dichlorobenzene	0.0250	0.0267		mg/L		107	80 - 120
1,4-Dichlorobenzene	0.0250	0.0266		mg/L		107	80 - 120
2-Butanone (MEK)	0.0500	0.0504		mg/L		101	54 - 156
2-Hexanone	0.0500	0.0560		mg/L		112	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0551		mg/L		110	46 - 158
Acetone	0.0500	0.0485		mg/L		97	50 - 149
Benzene	0.0250	0.0256		mg/L		102	77 - 123
Dichlorobromomethane	0.0250	0.0241		mg/L		96	69 - 126
Bromoform	0.0250	0.0245		mg/L		98	57 - 129
Bromomethane	0.0125	0.0120		mg/L		96	36 - 142
Carbon disulfide	0.0250	0.0256		mg/L		102	43 - 140
Carbon tetrachloride	0.0250	0.0237		mg/L		95	55 - 137
Chlorobenzene	0.0250	0.0257		mg/L		103	80 - 121
Chloroethane	0.0125	0.00970		mg/L		78	38 - 152
Chloroform	0.0250	0.0242		mg/L		97	74 - 122
Chloromethane	0.0125	0.0126		mg/L		101	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0248		mg/L		99	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0247		mg/L		99	64 - 130
Cyclohexane	0.0250	0.0263		mg/L		105	58 - 146
Chlorodibromomethane	0.0250	0.0240		mg/L		96	70 - 124
Dichlorodifluoromethane	0.0125	0.0113		mg/L		90	34 - 153

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567011/5
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0250	0.0262		mg/L		105	80 - 121
Isopropylbenzene	0.0250	0.0274		mg/L		110	74 - 128
Methyl acetate	0.0500	0.0429		mg/L		86	42 - 169
Methyl tert-butyl ether	0.0250	0.0247		mg/L		99	65 - 126
Methylcyclohexane	0.0250	0.0259		mg/L		104	62 - 136
Methylene Chloride	0.0250	0.0254		mg/L		102	71 - 125
Styrene	0.0250	0.0273		mg/L		109	80 - 135
Tetrachloroethene	0.0250	0.0265		mg/L		106	76 - 123
Toluene	0.0250	0.0265		mg/L		106	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0253		mg/L		101	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0254		mg/L		101	57 - 129
Trichloroethene	0.0250	0.0240		mg/L		96	70 - 122
Trichlorofluoromethane	0.0125	0.0103		mg/L		83	30 - 170
Vinyl chloride	0.0125	0.0118		mg/L		94	60 - 144
Xylenes, Total	0.0500	0.0534		mg/L		107	80 - 121
m-Xylene & p-Xylene	0.0250	0.0270		mg/L		108	80 - 120
o-Xylene	0.0250	0.0264		mg/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	98		62 - 137

Lab Sample ID: LCS 240-567011/6
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	0.0250	0.0240		mg/L		96	75 - 120
Methyl acrylate	0.0250	0.0243		mg/L		97	80 - 120
2-Ethylhexyl acrylate	0.0250	0.0198		mg/L		79	61 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120
4-Bromofluorobenzene (Surr)	104		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: MB 240-567049/1-A
Matrix: Solid
Analysis Batch: 567081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567049

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	120		56 - 125	03/28/23 14:04	03/29/23 01:57	1
Dibromofluoromethane (Surr)	101		41 - 138	03/28/23 14:04	03/29/23 01:57	1
4-Bromofluorobenzene (Surr)	122		41 - 143	03/28/23 14:04	03/29/23 01:57	1
1,2-Dichloroethane-d4 (Surr)	118		58 - 125	03/28/23 14:04	03/29/23 01:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-567049/2-A
Matrix: Solid
Analysis Batch: 567084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567049

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0050	0.0013	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1,2-Trichloroethane	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1-Dichloroethane	ND		0.0050	0.00069	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,1-Dichloroethene	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0025	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.0036	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Ethylene Dibromide	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichlorobenzene	ND		0.0050	0.0011	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloroethane	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloropropane	ND		0.0050	0.00085	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,3-Dichlorobenzene	ND		0.0050	0.00082	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
1,4-Dichlorobenzene	ND		0.0050	0.00088	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
2-Butanone (MEK)	ND		0.020	0.0036	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
2-Hexanone	ND		0.020	0.0041	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.020	0.0037	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Acetone	0.0387		0.025	0.021	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Benzene	ND		0.0050	0.00070	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Dichlorobromomethane	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Bromoform	ND		0.0050	0.0024	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Bromomethane	ND		0.0050	0.0042	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Carbon disulfide	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Carbon tetrachloride	ND		0.0050	0.0033	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chlorobenzene	ND		0.0050	0.00092	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloroethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloroform	ND		0.0050	0.00079	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chloromethane	ND		0.0050	0.0023	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
cis-1,2-Dichloroethene	ND		0.0050	0.0015	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
cis-1,3-Dichloropropene	ND		0.0050	0.0029	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Cyclohexane	ND		0.010	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Chlorodibromomethane	ND		0.0050	0.0028	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Dichlorodifluoromethane	ND		0.0050	0.00094	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Ethylbenzene	ND		0.0050	0.0010	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Isopropylbenzene	ND		0.0050	0.0019	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methyl acetate	ND		0.025	0.0034	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methyl tert-butyl ether	ND		0.0050	0.0020	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methylcyclohexane	ND		0.010	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Methylene Chloride	ND		0.025	0.012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Styrene	ND		0.0050	0.0012	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Tetrachloroethene	ND		0.0050	0.00073	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Toluene	ND		0.0050	0.00077	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
trans-1,2-Dichloroethene	ND		0.0050	0.0014	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
trans-1,3-Dichloropropene	ND		0.0050	0.0037	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Trichloroethene	ND		0.0050	0.00063	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Trichlorofluoromethane	ND		0.0050	0.0027	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Vinyl chloride	ND		0.0050	0.0018	mg/Kg		03/28/23 14:04	03/29/23 11:50	1
Xylenes, Total	ND		0.010	0.0016	mg/Kg		03/28/23 14:04	03/29/23 11:50	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567049/2-A
Matrix: Solid
Analysis Batch: 567084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567049

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	74		56 - 125	03/28/23 14:04	03/29/23 11:50	1
Dibromofluoromethane (Surr)	88		41 - 138	03/28/23 14:04	03/29/23 11:50	1
4-Bromofluorobenzene (Surr)	61		41 - 143	03/28/23 14:04	03/29/23 11:50	1
1,2-Dichloroethane-d4 (Surr)	87		58 - 125	03/28/23 14:04	03/29/23 11:50	1

Lab Sample ID: LCS 240-567081/4
Matrix: Solid
Analysis Batch: 567081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	122		56 - 125
Dibromofluoromethane (Surr)	109		41 - 138
4-Bromofluorobenzene (Surr)	120		41 - 143
1,2-Dichloroethane-d4 (Surr)	118		58 - 125

Lab Sample ID: LCS 240-567084/7
Matrix: Solid
Analysis Batch: 567084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0264		mg/Kg		106	74 - 136
1,1,1,2-Tetrachloroethane	0.0250	0.0244		mg/Kg		98	66 - 129
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0297		mg/Kg		119	64 - 148
1,1,2-Trichloroethane	0.0250	0.0260		mg/Kg		104	79 - 120
1,1-Dichloroethane	0.0250	0.0239		mg/Kg		96	74 - 121
1,1-Dichloroethene	0.0250	0.0265		mg/Kg		106	68 - 141
1,2,4-Trichlorobenzene	0.0250	0.0232		mg/Kg		93	58 - 132
1,2-Dibromo-3-Chloropropane	0.0250	0.0194		mg/Kg		78	52 - 133
Ethylene Dibromide	0.0250	0.0247		mg/Kg		99	80 - 121
1,2-Dichlorobenzene	0.0250	0.0252		mg/Kg		101	73 - 120
1,2-Dichloroethane	0.0250	0.0250		mg/Kg		100	71 - 123
1,2-Dichloropropane	0.0250	0.0236		mg/Kg		95	76 - 126
1,3-Dichlorobenzene	0.0250	0.0245		mg/Kg		98	73 - 120
1,4-Dichlorobenzene	0.0250	0.0244		mg/Kg		97	74 - 120
2-Butanone (MEK)	0.0500	0.0527		mg/Kg		105	63 - 142
2-Hexanone	0.0500	0.0465		mg/Kg		93	65 - 142
4-Methyl-2-pentanone (MIBK)	0.0500	0.0411		mg/Kg		82	62 - 142
Acetone	0.0500	0.0860	*+	mg/Kg		172	58 - 160
Benzene	0.0250	0.0248		mg/Kg		99	76 - 121
Dichlorobromomethane	0.0250	0.0244		mg/Kg		98	71 - 138
Bromoform	0.0250	0.0228		mg/Kg		91	57 - 140
Bromomethane	0.0250	0.0249		mg/Kg		100	10 - 171
Carbon disulfide	0.0250	0.0231		mg/Kg		92	43 - 152
Carbon tetrachloride	0.0250	0.0281		mg/Kg		113	64 - 144
Chlorobenzene	0.0250	0.0249		mg/Kg		100	80 - 120
Chloroethane	0.0250	0.0216		mg/Kg		87	11 - 164
Chloroform	0.0250	0.0262		mg/Kg		105	78 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567084/7
Matrix: Solid
Analysis Batch: 567084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	0.0250	0.0170		mg/Kg		68	41 - 142
cis-1,2-Dichloroethene	0.0250	0.0245		mg/Kg		98	78 - 124
cis-1,3-Dichloropropene	0.0250	0.0197		mg/Kg		79	70 - 133
Cyclohexane	0.0250	0.0249		mg/Kg		100	65 - 137
Chlorodibromomethane	0.0250	0.0244		mg/Kg		98	68 - 131
Dichlorodifluoromethane	0.0250	0.0187		mg/Kg		75	21 - 150
Ethylbenzene	0.0250	0.0248		mg/Kg		99	80 - 120
Isopropylbenzene	0.0250	0.0264		mg/Kg		106	80 - 130
Methyl acetate	0.0500	0.0431		mg/Kg		86	60 - 133
Methyl tert-butyl ether	0.0250	0.0218		mg/Kg		87	70 - 130
Methylcyclohexane	0.0250	0.0256		mg/Kg		103	70 - 138
Methylene Chloride	0.0250	0.0197	J	mg/Kg		79	71 - 124
Styrene	0.0250	0.0268		mg/Kg		107	75 - 140
Tetrachloroethene	0.0250	0.0271		mg/Kg		108	76 - 127
Toluene	0.0250	0.0257		mg/Kg		103	80 - 120
trans-1,2-Dichloroethene	0.0250	0.0255		mg/Kg		102	76 - 130
trans-1,3-Dichloropropene	0.0250	0.0204		mg/Kg		81	61 - 121
Trichloroethene	0.0250	0.0253		mg/Kg		101	74 - 130
Trichlorofluoromethane	0.0250	0.0252		mg/Kg		101	50 - 154
Vinyl chloride	0.0250	0.0221		mg/Kg		88	49 - 146
Xylenes, Total	0.0500	0.0529		mg/Kg		106	80 - 122
m-Xylene & p-Xylene	0.0250	0.0252		mg/Kg		101	80 - 122
o-Xylene	0.0250	0.0277		mg/Kg		111	80 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	80		56 - 125
Dibromofluoromethane (Surr)	82		41 - 138
4-Bromofluorobenzene (Surr)	74		41 - 143
1,2-Dichloroethane-d4 (Surr)	81		58 - 125

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566998/1-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.017	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
bis (2-chloroisopropyl) ether	ND		0.10	0.010	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4,5-Trichlorophenol	ND		0.15	0.069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4,6-Trichlorophenol	ND		0.15	0.064	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dichlorophenol	ND		0.15	0.044	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dimethylphenol	ND		0.15	0.040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dinitrophenol	ND		0.33	0.14	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,4-Dinitrotoluene	ND		0.20	0.062	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2,6-Dinitrotoluene	ND		0.20	0.056	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Chloronaphthalene	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Chlorophenol	ND		0.050	0.010	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Methylnaphthalene	ND		0.015	0.0020	mg/Kg		03/28/23 10:04	03/30/23 08:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566998/1-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566998

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Methylphenol	ND		0.20	0.031	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Nitroaniline	ND		0.20	0.040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
2-Nitrophenol	ND		0.050	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3,3'-Dichlorobenzidine	ND		0.10	0.043	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3-Nitroaniline	ND		0.20	0.049	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4,6-Dinitro-2-methylphenol	ND		0.33	0.080	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Bromophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chloro-3-methylphenol	ND		0.15	0.045	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chloroaniline	ND		0.15	0.030	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Chlorophenyl phenyl ether	ND		0.050	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Nitroaniline	ND		0.20	0.060	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
4-Nitrophenol	ND		0.33	0.094	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Acenaphthene	ND		0.015	0.0029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Acenaphthylene	ND		0.015	0.0040	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Acetophenone	ND		0.10	0.011	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Anthracene	ND		0.015	0.0024	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Atrazine	ND		0.20	0.036	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzaldehyde	ND		0.10	0.023	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[a]anthracene	ND		0.015	0.0034	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[a]pyrene	ND		0.015	0.0093	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[b]fluoranthene	ND		0.015	0.0065	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[g,h,i]perylene	ND		0.015	0.0071	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Benzo[k]fluoranthene	ND		0.015	0.0069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-chloroethoxy)methane	ND		0.10	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-chloroethyl)ether	ND		0.10	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Bis(2-ethylhexyl) phthalate	ND		0.070	0.051	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Butyl benzyl phthalate	ND		0.070	0.022	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Caprolactam	ND		0.33	0.075	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Carbazole	ND		0.050	0.019	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Chrysene	ND		0.015	0.0015	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dibenz(a,h)anthracene	ND		0.015	0.0069	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dibenzofuran	ND		0.050	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Diethyl phthalate	ND		0.070	0.031	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Dimethyl phthalate	ND		0.070	0.014	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Di-n-butyl phthalate	ND		0.070	0.051	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Di-n-octyl phthalate	ND		0.070	0.028	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Fluoranthene	ND		0.015	0.0045	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Fluorene	ND		0.015	0.0027	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorobenzene	ND		0.015	0.0029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorobutadiene	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachlorocyclopentadiene	ND		0.33	0.062	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Hexachloroethane	ND		0.050	0.0090	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Indeno[1,2,3-cd]pyrene	ND		0.015	0.0074	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Isophorone	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
N-Nitrosodi-n-propylamine	ND		0.050	0.011	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
N-Nitrosodiphenylamine	ND		0.050	0.012	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Naphthalene	ND		0.015	0.0024	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Nitrobenzene	ND		0.10	0.013	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Pentachlorophenol	ND		0.15	0.058	mg/Kg		03/28/23 10:04	03/30/23 08:57	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566998/1-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566998

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Phenanthrene	ND		0.015	0.0022	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Phenol	ND		0.050	0.0080	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
Pyrene	ND		0.015	0.0021	mg/Kg		03/28/23 10:04	03/30/23 08:57	1
3 & 4 Methylphenol	ND		0.40	0.029	mg/Kg		03/28/23 10:04	03/30/23 08:57	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	122		46 - 137	03/28/23 10:04	03/30/23 08:57	1
Phenol-d5 (Surr)	78		26 - 120	03/28/23 10:04	03/30/23 08:57	1
Nitrobenzene-d5 (Surr)	75		25 - 120	03/28/23 10:04	03/30/23 08:57	1
2-Fluorophenol (Surr)	72		20 - 120	03/28/23 10:04	03/30/23 08:57	1
2-Fluorobiphenyl (Surr)	89		34 - 120	03/28/23 10:04	03/30/23 08:57	1
2,4,6-Tribromophenol (Surr)	54		10 - 120	03/28/23 10:04	03/30/23 08:57	1

Lab Sample ID: LCS 240-566998/2-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566998

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1'-Biphenyl	0.667	0.499		mg/Kg		75	50 - 120
bis (2-chloroisopropyl) ether	0.667	0.419		mg/Kg		63	38 - 120
2,4,5-Trichlorophenol	0.667	0.581		mg/Kg		87	50 - 120
2,4,6-Trichlorophenol	0.667	0.581		mg/Kg		87	50 - 120
2,4-Dichlorophenol	0.667	0.533		mg/Kg		80	50 - 120
2,4-Dimethylphenol	0.667	0.453		mg/Kg		68	24 - 120
2,4-Dinitrophenol	1.33	1.16		mg/Kg		87	19 - 132
2,4-Dinitrotoluene	0.667	0.691		mg/Kg		104	64 - 120
2,6-Dinitrotoluene	0.667	0.691		mg/Kg		104	62 - 120
2-Chloronaphthalene	0.667	0.512		mg/Kg		77	51 - 120
2-Chlorophenol	0.667	0.492		mg/Kg		74	47 - 120
2-Methylnaphthalene	0.667	0.483		mg/Kg		72	38 - 120
2-Methylphenol	0.667	0.462		mg/Kg		69	45 - 120
2-Nitroaniline	0.667	0.600		mg/Kg		90	57 - 120
2-Nitrophenol	0.667	0.565		mg/Kg		85	51 - 120
3,3'-Dichlorobenzidine	1.33	1.38		mg/Kg		104	27 - 199
3-Nitroaniline	0.667	0.604		mg/Kg		91	41 - 120
4,6-Dinitro-2-methylphenol	1.33	1.17		mg/Kg		87	46 - 126
4-Bromophenyl phenyl ether	0.667	0.621		mg/Kg		93	65 - 120
4-Chloro-3-methylphenol	0.667	0.580		mg/Kg		87	51 - 120
4-Chloroaniline	0.667	0.451		mg/Kg		68	29 - 120
4-Chlorophenyl phenyl ether	0.667	0.599		mg/Kg		90	59 - 120
4-Nitroaniline	0.667	0.720		mg/Kg		108	48 - 128
4-Nitrophenol	1.33	1.26		mg/Kg		95	43 - 120
Acenaphthene	0.667	0.529		mg/Kg		79	52 - 120
Acenaphthylene	0.667	0.533		mg/Kg		80	52 - 120
Acetophenone	0.667	0.476		mg/Kg		71	47 - 120
Anthracene	0.667	0.625		mg/Kg		94	64 - 120
Atrazine	1.33	1.28		mg/Kg		96	71 - 125
Benzaldehyde	1.33	0.879		mg/Kg		66	42 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566998/2-A
Matrix: Solid
Analysis Batch: 567268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]anthracene	0.667	0.677		mg/Kg		102	70 - 120
Benzo[a]pyrene	0.667	0.552		mg/Kg		83	63 - 125
Benzo[b]fluoranthene	0.667	0.510		mg/Kg		77	64 - 121
Benzo[g,h,i]perylene	0.667	0.645		mg/Kg		97	62 - 120
Benzo[k]fluoranthene	0.667	0.562		mg/Kg		84	63 - 128
Bis(2-chloroethoxy)methane	0.667	0.462		mg/Kg		69	50 - 120
Bis(2-chloroethyl)ether	0.667	0.382		mg/Kg		57	42 - 120
Bis(2-ethylhexyl) phthalate	0.667	0.638		mg/Kg		96	63 - 133
Butyl benzyl phthalate	0.667	0.632		mg/Kg		95	66 - 127
Caprolactam	1.33	1.32		mg/Kg		99	67 - 120
Carbazole	0.667	0.632		mg/Kg		95	61 - 129
Chrysene	0.667	0.638		mg/Kg		96	67 - 120
Dibenz(a,h)anthracene	0.667	0.626		mg/Kg		94	62 - 120
Dibenzofuran	0.667	0.562		mg/Kg		84	55 - 120
Diethyl phthalate	0.667	0.681		mg/Kg		102	61 - 120
Dimethyl phthalate	0.667	0.649		mg/Kg		97	64 - 120
Di-n-butyl phthalate	0.667	0.599		mg/Kg		90	70 - 129
Di-n-octyl phthalate	0.667	0.586		mg/Kg		88	64 - 129
Fluoranthene	0.667	0.647		mg/Kg		97	71 - 124
Fluorene	0.667	0.591		mg/Kg		89	58 - 120
Hexachlorobenzene	0.667	0.621		mg/Kg		93	59 - 120
Hexachlorobutadiene	0.667	0.483		mg/Kg		72	45 - 120
Hexachlorocyclopentadiene	0.667	0.374		mg/Kg		56	10 - 120
Hexachloroethane	0.667	0.430		mg/Kg		64	39 - 120
Indeno[1,2,3-cd]pyrene	0.667	0.652		mg/Kg		98	65 - 122
Isophorone	0.667	0.473		mg/Kg		71	50 - 120
N-Nitrosodi-n-propylamine	0.667	0.464		mg/Kg		70	48 - 120
N-Nitrosodiphenylamine	0.667	0.573		mg/Kg		86	64 - 120
Naphthalene	0.667	0.450		mg/Kg		67	34 - 120
Nitrobenzene	0.667	0.451		mg/Kg		68	48 - 120
Pentachlorophenol	1.33	0.774		mg/Kg		58	10 - 120
Phenanthrene	0.667	0.573		mg/Kg		86	60 - 120
Phenol	0.667	0.458		mg/Kg		69	48 - 120
Pyrene	0.667	0.684		mg/Kg		103	67 - 120
3 & 4 Methylphenol	0.667	0.478		mg/Kg		72	49 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	116		46 - 137
Phenol-d5 (Surr)	78		26 - 120
Nitrobenzene-d5 (Surr)	72		25 - 120
2-Fluorophenol (Surr)	77		20 - 120
2-Fluorobiphenyl (Surr)	84		34 - 120
2,4,6-Tribromophenol (Surr)	112		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-567192/2-A
Matrix: Solid
Analysis Batch: 567433

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567192

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 12:48	1
Barium	ND		0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 12:48	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 12:48	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 12:48	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 12:48	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 12:48	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 12:48	1

Lab Sample ID: LCS 240-567192/3-A
Matrix: Solid
Analysis Batch: 567433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567192

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.28		mg/L		114	50 - 150
Barium	2.00	2.05		mg/L		103	50 - 150
Cadmium	1.00	1.07		mg/L		107	50 - 150
Chromium	1.00	1.03		mg/L		103	50 - 150
Lead	1.00	0.947		mg/L		95	50 - 150
Selenium	2.00	2.33		mg/L		117	50 - 150
Silver	0.100	0.109		mg/L		109	50 - 150

Lab Sample ID: LB 240-567058/1-B
Matrix: Solid
Analysis Batch: 567433

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 567192

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 12:44	1
Barium	ND		0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 12:44	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 12:44	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 12:44	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 12:44	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 12:44	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 12:44	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-567194/2-A
Matrix: Solid
Analysis Batch: 567395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 12:11	1

Lab Sample ID: LCS 240-567194/3-A
Matrix: Solid
Analysis Batch: 567395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00533		mg/L		107	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-567058/1-C
Matrix: Solid
Analysis Batch: 567395

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 567194

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 12:09	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

GC/MS VOA

Analysis Batch: 567011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-2	TRIP BLANK	Total/NA	Water	8260D	
MB 240-567011/8	Method Blank	Total/NA	Water	8260D	
LCS 240-567011/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-567011/6	Lab Control Sample	Total/NA	Water	8260D	

Prep Batch: 567049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	5035	
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	5035	
MB 240-567049/1-A	Method Blank	Total/NA	Solid	5035	
MB 240-567049/2-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 567081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	8260D	567049
MB 240-567049/1-A	Method Blank	Total/NA	Solid	8260D	567049
LCS 240-567081/4	Lab Control Sample	Total/NA	Solid	8260D	

Analysis Batch: 567084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	8260D	567049
MB 240-567049/2-A	Method Blank	Total/NA	Solid	8260D	567049
LCS 240-567084/7	Lab Control Sample	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 566998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	3540C	
MB 240-566998/1-A	Method Blank	Total/NA	Solid	3540C	
LCS 240-566998/2-A	Lab Control Sample	Total/NA	Solid	3540C	

Analysis Batch: 567268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	8270E	566998
MB 240-566998/1-A	Method Blank	Total/NA	Solid	8270E	566998
LCS 240-566998/2-A	Lab Control Sample	Total/NA	Solid	8270E	566998

Metals

Leach Batch: 567058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	TCLP	Solid	1311	
LB 240-567058/1-B	Method Blank	TCLP	Solid	1311	
LB 240-567058/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 567192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	TCLP	Solid	3010A	567058
LB 240-567058/1-B	Method Blank	TCLP	Solid	3010A	567058
MB 240-567192/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-567192/3-A	Lab Control Sample	Total/NA	Solid	3010A	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182577-1

Metals

Prep Batch: 567194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	TCLP	Solid	7470A	567058
LB 240-567058/1-C	Method Blank	TCLP	Solid	7470A	567058
MB 240-567194/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-567194/3-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 567395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	TCLP	Solid	7470A	567194
LB 240-567058/1-C	Method Blank	TCLP	Solid	7470A	567194
MB 240-567194/2-A	Method Blank	Total/NA	Solid	7470A	567194
LCS 240-567194/3-A	Lab Control Sample	Total/NA	Solid	7470A	567194

Analysis Batch: 567433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	TCLP	Solid	6010D	567192
LB 240-567058/1-B	Method Blank	TCLP	Solid	6010D	567192
MB 240-567192/2-A	Method Blank	Total/NA	Solid	6010D	567192
LCS 240-567192/3-A	Lab Control Sample	Total/NA	Solid	6010D	567192

General Chemistry

Analysis Batch: 567221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182577-1	WC-S. TRACK-SP2E-01 (2-3')	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			567058	DRJ	EET CAN	03/28/23 16:35 - 03/29/23 08:40 ¹
TCLP	Prep	3010A			567192	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 13:32
TCLP	Leach	1311			567058	DRJ	EET CAN	03/28/23 16:35 - 03/29/23 08:40 ¹
TCLP	Prep	7470A			567194	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 12:28
Total/NA	Analysis	Moisture		1	567221	BLW	EET CAN	03/29/23 15:08

Client Sample ID: WC-S. TRACK-SP2E-01 (2-3')

Lab Sample ID: 240-182577-1

Date Collected: 03/25/23 16:10

Matrix: Solid

Date Received: 03/27/23 18:30

Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			567049	LAM	EET CAN	03/27/23 20:20
Total/NA	Analysis	8260D		1	567081	CS	EET CAN	03/29/23 04:02
Total/NA	Prep	5035			567049	LAM	EET CAN	03/27/23 20:20
Total/NA	Analysis	8260D		1	567084	TJL2	EET CAN	03/29/23 13:15
Total/NA	Prep	3540C			566998	BMB	EET CAN	03/28/23 10:04
Total/NA	Analysis	8270E		12.5	567268	MRU	EET CAN	03/30/23 14:16

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182577-2

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/27/23 18:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 16:02

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182577-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

Address: 180 Van Buren Ave
 Berberon OH 44203-3543
 330-497-9390

642815

Environment Testing
 America

TAL-8210

Regulatory Program: DW NPDES RCRA Other: 4

Project Manager: <u>Jason Antipio</u> Tel/Email: <u>Jason.Antipio@arcadis.com</u>		Site Contact: Lab Contact:		Date: <u>3/25/23</u> Carrier: <u>Courier</u>		COC No.: <u>1</u> of <u>1</u> COCs Sampler: <u>Michelle Clayton</u> For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:	
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <u>Rush</u>		Filtered Sample (Y/N) <u>MM</u> Perform MS / MSD (Y / N) <u>XX</u> Total VOC <u>XX</u> Total SVOC <u>XX</u> TCLP Metals <u>XX</u>		Sample Specific Notes: 			
Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.		
<u>WC-S-Track-SP2E-01(2-3)</u>	<u>3/25/23</u>	<u>16:10</u>	<u>G</u>	<u>S</u>	<u>9</u>		
<u>Trap Blank & E</u>	<u>3/29/23</u>	<u>-</u>	<u>-</u>	<u>W</u>	<u>1</u>		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <u>V043 (VAIL) (H10) (UCL - 15204)</u>							
Special Instructions/QC Requirements & Comments: <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months							
Custody Seal No.: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temp. (°C): Obs'd: _____ Received by: <u>Jason Antipio</u>		Company: <u>ARCADIS</u>		Date/Time: <u>3/27/23 17:00</u>	
Relinquished by: <u>Jason Emberson</u>		Relinquished by: <u>Jason Antipio</u>		Company: <u>ETNC</u>		Date/Time: <u>3-27-23 1830</u>	



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 182577

Client Arcadis Site Name _____

Cooler unpacked by: _____

Cooler Received on 3-27-23 Opened on 3-27-23

DWE

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 19 (CF+0.3 °C) Observed Cooler Temp. 0.5 °C Corrected Cooler Temp. 0.8 °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
- 14. Were VOAs on the COC? Yes No NA
- 15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 01042016 Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

TB analyses are marked for VOC, SVOC, TCLP metals. Rec'd one VOC vial preserved with HCl. Only logged for VOC due to insufficient volume. DWE 3-27-23
Terra core was received out of hold. DWE 3-27-23

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Chain of Custody Record

Address: 180 Van Buren Ave
Beverton OH 44203-3543
330-497-9340

642815  eurofins

Environment Testing
America

Regulatory Program: DW NPDES RCRA Other: LM 3/29/23
 Project Manager: Jason Artiga NPDES RCRA Other: LM 3/29/23
 Tel/Email: Jason.Artiga@eurofins.com NPDES RCRA Other: LM 3/29/23

Client Contact
 Company Name: Arcaadis
 Address: 4665 Cornell rd Ste 200
 City/State/Zip: Cincinnati: OH 45241
 Phone: 513-860-8700
 Fax: LM 3/29/23
 Project Name: East Palestine Train Derailment
 Site: East Palestine OH
 PO# 24030745

Site Contact: LM 3/29/23 Date: 3/25/23 Carrier: Courier
 Lab Contact: LM 3/29/23 Date: 3/25/23 Carrier: Courier

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below
 2 weeks 1 week 2 days 1 day
Rush

COC No. 1 of 1 COCs
 Sampler: Michelle Clayton
 For Lab Use Only:
 Walk-in Client.
 Lab Sampling.
 Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes
<u>WC-S Truck-SP2E-01(2-3')</u>	<u>3/15/23</u>	<u>16:10</u>	<u>G</u>	<u>S</u>	<u>9</u>	<u>N</u>	<u>X</u>	<u>Total VOC</u>
<u>Trip Blank & E</u>	<u>3/29/23</u>	<u>-</u>	<u>-</u>	<u>W</u>	<u>1</u>	<u>N</u>	<u>X</u>	<u>Total VOC</u>
								<u>TCP Metals</u>



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other
 Possible Hazard Identification: V043(VML)(H)(D)(U)(L)(S)(E)
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazardous Flammable Skin Irritant Unknown Poison B
 Special Instructions/QC Requirements & Comments: LM 3/29/23

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seal No.: LM 3/29/23
 Relinquished by: Jason Artiga
 Relinquished by: Jason Artiga
 Relinquished by: Jason Artiga

Received by: Jason Artiga Date/Time: 3/27/23 17:00
 Received by: Jason Artiga Date/Time: 3/27/23 17:00
 Received in Laboratory by: Jason Artiga Date/Time: 3/27/23 18:30

Company: Arcaadis Company: Eurofins Company: Eurofins
 Company: Eurofins Company: Eurofins Company: Eurofins



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 182577

Client Arcadis Site Name _____
 Cooler Received on 3-27-23 Opened on 3-27-23
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Cooler unpacked by: _____

ME

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box _____ Client Cooler _____ Box _____ Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # 19 (CF+0.3 °C) Observed Cooler Temp. 0.5 °C Corrected Cooler Temp. 0.8 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1

Yes	No	
Yes	No	NA
Yes	No	
Yes	No	NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 01042016 Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

TB analyses are marked for VOC, SVOC, TCLP metals. Rec'd one VOC vial preserved with HCl. Only logged for VOC due to insufficient volume. ME 3-27-23
Terra core was received out of hold. ME 3-27-23

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____
 VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Daniel Hunt
Norfolk Southern Corporation
650 Peachtree Street, NW
Atlanta, Georgia 30308

Generated 3/7/2023 8:37:12 PM

JOB DESCRIPTION

NS-ER East Palestine, OH

JOB NUMBER

410-117699-1

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
3/7/2023 8:37:12 PM

Authorized for release by
Kelly Bauer, Project Manager
Kelly.Bauer@et.eurofinsus.com
(717)556-7262

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.





Table of Contents

Cover Page	1
Table of Contents	4
Definitions/Glossary	5
Case Narrative	6
Detection Summary	7
Client Sample Results	9
Surrogate Summary	24
QC Sample Results	25
QC Association Summary	30
Lab Chronicle	31
Certification Summary	33
Method Summary	35
Sample Summary	36
Chain of Custody	37
Receipt Checklists	38

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Job ID: 410-117699-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

**Job Narrative
410-117699-1**

Receipt

The samples were received on 3/6/2023 11:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-257204

Lab Sample ID: 410-117699-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	18		5.0		ug/L	1		8260D	Total/NA
Acetone	21		20		ug/L	1		8260D	Total/NA
Ethanol	1100		750		ug/L	1		8260D	Total/NA
n-Butyl acrylate	130		5.0		ug/L	1		8260D	Total/NA
Vinyl chloride	6.2		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: WC-251478

Lab Sample ID: 410-117699-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	27		5.0		ug/L	1		8260D	Total/NA
Styrene	10		5.0		ug/L	1		8260D	Total/NA
Toluene	1.5		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	6.4		1.0		ug/L	1		8260D	Total/NA
n-Butyl acrylate - DL	1500		50		ug/L	10		8260D	Total/NA

Client Sample ID: WC-251321

Lab Sample ID: 410-117699-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	23		5.0		ug/L	1		8260D	Total/NA
Vinyl chloride	8.1		1.0		ug/L	1		8260D	Total/NA
n-Butyl acrylate - DL	330		50		ug/L	10		8260D	Total/NA

Client Sample ID: WC-251633

Lab Sample ID: 410-117699-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	6.8		5.0		ug/L	1		8260D	Total/NA
Acetone	24		20		ug/L	1		8260D	Total/NA
n-Butyl acrylate	35		5.0		ug/L	1		8260D	Total/NA
Vinyl chloride	11		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: WC-256094

Lab Sample ID: 410-117699-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.9		1.0		ug/L	1		8260D	Total/NA
n-Butyl acrylate	77		5.0		ug/L	1		8260D	Total/NA
o-Xylene	2.2		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	5.8		1.0		ug/L	1		8260D	Total/NA
Xylenes, Total	2.2		1.0		ug/L	1		8260D	Total/NA
2-Ethylhexyl acrylate - DL	300		50		ug/L	10		8260D	Total/NA

Client Sample ID: WC-251091

Lab Sample ID: 410-117699-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	220		5.0		ug/L	1		8260D	Total/NA
Benzene	3.7		1.0		ug/L	1		8260D	Total/NA
Vinyl chloride	62		1.0		ug/L	1		8260D	Total/NA
n-Butyl acrylate - DL	2600		100		ug/L	20		8260D	Total/NA

Client Sample ID: WC-251079

Lab Sample ID: 410-117699-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Ethylhexyl acrylate	55		10		ug/L	2		8260D	Total/NA
Ethanol	7200		1500		ug/L	2		8260D	Total/NA
Vinyl chloride	2.8		2.0		ug/L	2		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251079 (Continued)

Lab Sample ID: 410-117699-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
n-Butyl acrylate - DL	5600		250		ug/L	50		8260D	Total/NA

Client Sample ID: WC-251782

Lab Sample ID: 410-117699-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
n-Butyl acrylate - DL	1200		50		ug/L	10		8260D	Total/NA

Client Sample ID: WC-538B

Lab Sample ID: 410-117699-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
n-Butyl acrylate - DL	49000		1000		ug/L	200		8260D	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 410-117699-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-257204

Lab Sample ID: 410-117699-1

Date Collected: 03/06/23 17:05

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 13:34	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 13:34	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 13:34	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 13:34	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 13:34	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 13:34	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 13:34	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 13:34	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:34	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 13:34	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 13:34	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:34	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:34	1
2-Butanone	ND		10		ug/L			03/07/23 13:34	1
2-Ethylhexyl acrylate	18		5.0		ug/L			03/07/23 13:34	1
2-Hexanone	ND		10		ug/L			03/07/23 13:34	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 13:34	1
Acetone	21		20		ug/L			03/07/23 13:34	1
Benzene	ND		1.0		ug/L			03/07/23 13:34	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 13:34	1
Bromoform	ND		4.0		ug/L			03/07/23 13:34	1
Bromomethane	ND		1.0		ug/L			03/07/23 13:34	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 13:34	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 13:34	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 13:34	1
Chloroethane	ND		1.0		ug/L			03/07/23 13:34	1
Chloroform	ND		1.0		ug/L			03/07/23 13:34	1
Chloromethane	ND		2.0		ug/L			03/07/23 13:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 13:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:34	1
Cyclohexane	ND		5.0		ug/L			03/07/23 13:34	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 13:34	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 13:34	1
Ethanol	1100		750		ug/L			03/07/23 13:34	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 13:34	1
Freon 113	ND		10		ug/L			03/07/23 13:34	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 13:34	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 13:34	1
Methyl acetate	ND		5.0		ug/L			03/07/23 13:34	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 13:34	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 13:34	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 13:34	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 13:34	1
n-Butyl acrylate	130		5.0		ug/L			03/07/23 13:34	1
o-Xylene	ND		1.0		ug/L			03/07/23 13:34	1
Styrene	ND		5.0		ug/L			03/07/23 13:34	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 13:34	1
Toluene	ND		1.0		ug/L			03/07/23 13:34	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 13:34	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-257204

Lab Sample ID: 410-117699-1

Date Collected: 03/06/23 17:05

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:34	1
Trichloroethene	ND		1.0		ug/L			03/07/23 13:34	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 13:34	1
Vinyl chloride	6.2		1.0		ug/L			03/07/23 13:34	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		03/07/23 13:34	1
4-Bromofluorobenzene (Surr)	105		80 - 120		03/07/23 13:34	1
Dibromofluoromethane (Surr)	111		80 - 120		03/07/23 13:34	1
Toluene-d8 (Surr)	98		80 - 120		03/07/23 13:34	1

Client Sample ID: WC-251478

Lab Sample ID: 410-117699-2

Date Collected: 03/06/23 17:23

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 14:40	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 14:40	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 14:40	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 14:40	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 14:40	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 14:40	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 14:40	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 14:40	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:40	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 14:40	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 14:40	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:40	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:40	1
2-Butanone	ND		10		ug/L			03/07/23 14:40	1
2-Ethylhexyl acrylate	27		5.0		ug/L			03/07/23 14:40	1
2-Hexanone	ND		10		ug/L			03/07/23 14:40	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 14:40	1
Acetone	ND		20		ug/L			03/07/23 14:40	1
Benzene	ND		1.0		ug/L			03/07/23 14:40	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 14:40	1
Bromoform	ND		4.0		ug/L			03/07/23 14:40	1
Bromomethane	ND		1.0		ug/L			03/07/23 14:40	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 14:40	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 14:40	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 14:40	1
Chloroethane	ND		1.0		ug/L			03/07/23 14:40	1
Chloroform	ND		1.0		ug/L			03/07/23 14:40	1
Chloromethane	ND		2.0		ug/L			03/07/23 14:40	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 14:40	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 14:40	1
Cyclohexane	ND		5.0		ug/L			03/07/23 14:40	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 14:40	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251478

Lab Sample ID: 410-117699-2

Date Collected: 03/06/23 17:23

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 14:40	1
Ethanol	ND		750		ug/L			03/07/23 14:40	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 14:40	1
Freon 113	ND		10		ug/L			03/07/23 14:40	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 14:40	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 14:40	1
Methyl acetate	ND		5.0		ug/L			03/07/23 14:40	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 14:40	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 14:40	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 14:40	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 14:40	1
o-Xylene	ND		1.0		ug/L			03/07/23 14:40	1
Styrene	10		5.0		ug/L			03/07/23 14:40	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 14:40	1
Toluene	1.5		1.0		ug/L			03/07/23 14:40	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 14:40	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 14:40	1
Trichloroethene	ND		1.0		ug/L			03/07/23 14:40	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 14:40	1
Vinyl chloride	6.4		1.0		ug/L			03/07/23 14:40	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 14:40	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/07/23 14:40	1
Dibromofluoromethane (Surr)	109		80 - 120		03/07/23 14:40	1
Toluene-d8 (Surr)	98		80 - 120		03/07/23 14:40	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	1500		50		ug/L			03/07/23 15:02	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 15:02	10
4-Bromofluorobenzene (Surr)	99		80 - 120		03/07/23 15:02	10
Dibromofluoromethane (Surr)	109		80 - 120		03/07/23 15:02	10
Toluene-d8 (Surr)	99		80 - 120		03/07/23 15:02	10

Client Sample ID: WC-251321

Lab Sample ID: 410-117699-3

Date Collected: 03/06/23 17:25

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 15:24	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 15:24	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 15:24	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 15:24	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 15:24	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 15:24	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 15:24	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251321

Lab Sample ID: 410-117699-3

Date Collected: 03/06/23 17:25

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 15:24	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 15:24	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 15:24	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 15:24	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 15:24	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 15:24	1
2-Butanone	ND		10		ug/L			03/07/23 15:24	1
2-Ethylhexyl acrylate	23		5.0		ug/L			03/07/23 15:24	1
2-Hexanone	ND		10		ug/L			03/07/23 15:24	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 15:24	1
Acetone	ND		20		ug/L			03/07/23 15:24	1
Benzene	ND		1.0		ug/L			03/07/23 15:24	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 15:24	1
Bromoform	ND		4.0		ug/L			03/07/23 15:24	1
Bromomethane	ND		1.0		ug/L			03/07/23 15:24	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 15:24	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 15:24	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 15:24	1
Chloroethane	ND		1.0		ug/L			03/07/23 15:24	1
Chloroform	ND		1.0		ug/L			03/07/23 15:24	1
Chloromethane	ND		2.0		ug/L			03/07/23 15:24	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 15:24	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 15:24	1
Cyclohexane	ND		5.0		ug/L			03/07/23 15:24	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 15:24	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 15:24	1
Ethanol	ND		750		ug/L			03/07/23 15:24	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 15:24	1
Freon 113	ND		10		ug/L			03/07/23 15:24	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 15:24	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 15:24	1
Methyl acetate	ND		5.0		ug/L			03/07/23 15:24	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 15:24	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 15:24	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 15:24	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 15:24	1
o-Xylene	ND		1.0		ug/L			03/07/23 15:24	1
Styrene	ND		5.0		ug/L			03/07/23 15:24	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 15:24	1
Toluene	ND		1.0		ug/L			03/07/23 15:24	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 15:24	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 15:24	1
Trichloroethene	ND		1.0		ug/L			03/07/23 15:24	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 15:24	1
Vinyl chloride	8.1		1.0		ug/L			03/07/23 15:24	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		03/07/23 15:24	1
4-Bromofluorobenzene (Surr)	98		80 - 120		03/07/23 15:24	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251321

Lab Sample ID: 410-117699-3

Date Collected: 03/06/23 17:25

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 15:24	1
Toluene-d8 (Surr)	98		80 - 120		03/07/23 15:24	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	330		50		ug/L			03/07/23 15:46	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		03/07/23 15:46	10
4-Bromofluorobenzene (Surr)	96		80 - 120		03/07/23 15:46	10
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 15:46	10
Toluene-d8 (Surr)	99		80 - 120		03/07/23 15:46	10

Client Sample ID: WC-251633

Lab Sample ID: 410-117699-4

Date Collected: 03/06/23 17:32

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 13:56	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 13:56	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 13:56	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 13:56	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 13:56	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 13:56	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 13:56	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 13:56	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:56	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 13:56	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 13:56	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:56	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:56	1
2-Butanone	ND		10		ug/L			03/07/23 13:56	1
2-Ethylhexyl acrylate	6.8		5.0		ug/L			03/07/23 13:56	1
2-Hexanone	ND		10		ug/L			03/07/23 13:56	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 13:56	1
Acetone	24		20		ug/L			03/07/23 13:56	1
Benzene	ND		1.0		ug/L			03/07/23 13:56	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 13:56	1
Bromoform	ND		4.0		ug/L			03/07/23 13:56	1
Bromomethane	ND		1.0		ug/L			03/07/23 13:56	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 13:56	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 13:56	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 13:56	1
Chloroethane	ND		1.0		ug/L			03/07/23 13:56	1
Chloroform	ND		1.0		ug/L			03/07/23 13:56	1
Chloromethane	ND		2.0		ug/L			03/07/23 13:56	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 13:56	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:56	1
Cyclohexane	ND		5.0		ug/L			03/07/23 13:56	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251633

Lab Sample ID: 410-117699-4

Date Collected: 03/06/23 17:32

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		1.0		ug/L			03/07/23 13:56	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 13:56	1
Ethanol	ND		750		ug/L			03/07/23 13:56	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 13:56	1
Freon 113	ND		10		ug/L			03/07/23 13:56	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 13:56	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 13:56	1
Methyl acetate	ND		5.0		ug/L			03/07/23 13:56	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 13:56	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 13:56	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 13:56	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 13:56	1
n-Butyl acrylate	35		5.0		ug/L			03/07/23 13:56	1
o-Xylene	ND		1.0		ug/L			03/07/23 13:56	1
Styrene	ND		5.0		ug/L			03/07/23 13:56	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 13:56	1
Toluene	ND		1.0		ug/L			03/07/23 13:56	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 13:56	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:56	1
Trichloroethene	ND		1.0		ug/L			03/07/23 13:56	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 13:56	1
Vinyl chloride	11		1.0		ug/L			03/07/23 13:56	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 13:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		03/07/23 13:56	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/07/23 13:56	1
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 13:56	1
Toluene-d8 (Surr)	99		80 - 120		03/07/23 13:56	1

Client Sample ID: WC-256094

Lab Sample ID: 410-117699-5

Date Collected: 03/06/23 17:36

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 14:18	1
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 14:18	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 14:18	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 14:18	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 14:18	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 14:18	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 14:18	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 14:18	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:18	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 14:18	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 14:18	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:18	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 14:18	1
2-Butanone	ND		10		ug/L			03/07/23 14:18	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-256094

Lab Sample ID: 410-117699-5

Date Collected: 03/06/23 17:36

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		10		ug/L			03/07/23 14:18	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 14:18	1
Acetone	ND		20		ug/L			03/07/23 14:18	1
Benzene	3.9		1.0		ug/L			03/07/23 14:18	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 14:18	1
Bromoform	ND		4.0		ug/L			03/07/23 14:18	1
Bromomethane	ND		1.0		ug/L			03/07/23 14:18	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 14:18	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 14:18	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 14:18	1
Chloroethane	ND		1.0		ug/L			03/07/23 14:18	1
Chloroform	ND		1.0		ug/L			03/07/23 14:18	1
Chloromethane	ND		2.0		ug/L			03/07/23 14:18	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 14:18	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 14:18	1
Cyclohexane	ND		5.0		ug/L			03/07/23 14:18	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 14:18	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 14:18	1
Ethanol	ND		750		ug/L			03/07/23 14:18	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 14:18	1
Freon 113	ND		10		ug/L			03/07/23 14:18	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 14:18	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 14:18	1
Methyl acetate	ND		5.0		ug/L			03/07/23 14:18	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 14:18	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 14:18	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 14:18	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 14:18	1
n-Butyl acrylate	77		5.0		ug/L			03/07/23 14:18	1
o-Xylene	2.2		1.0		ug/L			03/07/23 14:18	1
Styrene	ND		5.0		ug/L			03/07/23 14:18	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 14:18	1
Toluene	ND		1.0		ug/L			03/07/23 14:18	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 14:18	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 14:18	1
Trichloroethene	ND		1.0		ug/L			03/07/23 14:18	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 14:18	1
Vinyl chloride	5.8		1.0		ug/L			03/07/23 14:18	1
Xylenes, Total	2.2		1.0		ug/L			03/07/23 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		03/07/23 14:18	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/07/23 14:18	1
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 14:18	1
Toluene-d8 (Surr)	99		80 - 120		03/07/23 14:18	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Ethylhexyl acrylate	300		50		ug/L			03/07/23 19:04	10

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-256094

Lab Sample ID: 410-117699-5

Date Collected: 03/06/23 17:36

Matrix: Water

Date Received: 03/06/23 23:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		03/07/23 19:04	10
4-Bromofluorobenzene (Surr)	95		80 - 120		03/07/23 19:04	10
Dibromofluoromethane (Surr)	109		80 - 120		03/07/23 19:04	10
Toluene-d8 (Surr)	100		80 - 120		03/07/23 19:04	10

Client Sample ID: WC-251091

Lab Sample ID: 410-117699-6

Date Collected: 03/06/23 17:40

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 16:08	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 16:08	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 16:08	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 16:08	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 16:08	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 16:08	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 16:08	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 16:08	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 16:08	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 16:08	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 16:08	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 16:08	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 16:08	1
2-Butanone	ND		10		ug/L			03/07/23 16:08	1
2-Ethylhexyl acrylate	220		5.0		ug/L			03/07/23 16:08	1
2-Hexanone	ND		10		ug/L			03/07/23 16:08	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 16:08	1
Acetone	ND		20		ug/L			03/07/23 16:08	1
Benzene	3.7		1.0		ug/L			03/07/23 16:08	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 16:08	1
Bromoform	ND		4.0		ug/L			03/07/23 16:08	1
Bromomethane	ND		1.0		ug/L			03/07/23 16:08	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 16:08	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 16:08	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 16:08	1
Chloroethane	ND		1.0		ug/L			03/07/23 16:08	1
Chloroform	ND		1.0		ug/L			03/07/23 16:08	1
Chloromethane	ND		2.0		ug/L			03/07/23 16:08	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 16:08	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 16:08	1
Cyclohexane	ND		5.0		ug/L			03/07/23 16:08	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 16:08	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 16:08	1
Ethanol	ND		750		ug/L			03/07/23 16:08	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 16:08	1
Freon 113	ND		10		ug/L			03/07/23 16:08	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 16:08	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 16:08	1
Methyl acetate	ND		5.0		ug/L			03/07/23 16:08	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251091

Lab Sample ID: 410-117699-6

Date Collected: 03/06/23 17:40

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		5.0		ug/L			03/07/23 16:08	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 16:08	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 16:08	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 16:08	1
o-Xylene	ND		1.0		ug/L			03/07/23 16:08	1
Styrene	ND		5.0		ug/L			03/07/23 16:08	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 16:08	1
Toluene	ND		1.0		ug/L			03/07/23 16:08	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 16:08	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 16:08	1
Trichloroethene	ND		1.0		ug/L			03/07/23 16:08	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 16:08	1
Vinyl chloride	62		1.0		ug/L			03/07/23 16:08	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 16:08	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/07/23 16:08	1
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 16:08	1
Toluene-d8 (Surr)	98		80 - 120		03/07/23 16:08	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	2600		100		ug/L			03/07/23 16:30	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 16:30	20
4-Bromofluorobenzene (Surr)	97		80 - 120		03/07/23 16:30	20
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 16:30	20
Toluene-d8 (Surr)	99		80 - 120		03/07/23 16:30	20

Client Sample ID: WC-251079

Lab Sample ID: 410-117699-7

Date Collected: 03/06/23 17:46

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0		ug/L			03/07/23 16:52	2
1,1,1,2-Tetrachloroethane	ND		2.0		ug/L			03/07/23 16:52	2
1,1,2-Trichloroethane	ND		2.0		ug/L			03/07/23 16:52	2
1,1-Dichloroethane	ND		2.0		ug/L			03/07/23 16:52	2
1,1-Dichloroethene	ND		2.0		ug/L			03/07/23 16:52	2
1,2,4-Trichlorobenzene	ND		10		ug/L			03/07/23 16:52	2
1,2-Dibromo-3-Chloropropane	ND		10		ug/L			03/07/23 16:52	2
1,2-Dibromoethane	ND		2.0		ug/L			03/07/23 16:52	2
1,2-Dichlorobenzene	ND		10		ug/L			03/07/23 16:52	2
1,2-Dichloroethane	ND		2.0		ug/L			03/07/23 16:52	2
1,2-Dichloropropane	ND		2.0		ug/L			03/07/23 16:52	2
1,3-Dichlorobenzene	ND		10		ug/L			03/07/23 16:52	2
1,4-Dichlorobenzene	ND		10		ug/L			03/07/23 16:52	2
2-Butanone	ND		20		ug/L			03/07/23 16:52	2

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251079

Lab Sample ID: 410-117699-7

Date Collected: 03/06/23 17:46

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Ethylhexyl acrylate	55		10		ug/L			03/07/23 16:52	2
2-Hexanone	ND		20		ug/L			03/07/23 16:52	2
4-Methyl-2-pentanone	ND		20		ug/L			03/07/23 16:52	2
Acetone	ND		40		ug/L			03/07/23 16:52	2
Benzene	ND		2.0		ug/L			03/07/23 16:52	2
Bromodichloromethane	ND		2.0		ug/L			03/07/23 16:52	2
Bromoform	ND		8.0		ug/L			03/07/23 16:52	2
Bromomethane	ND		2.0		ug/L			03/07/23 16:52	2
Carbon disulfide	ND		10		ug/L			03/07/23 16:52	2
Carbon tetrachloride	ND		2.0		ug/L			03/07/23 16:52	2
Chlorobenzene	ND		2.0		ug/L			03/07/23 16:52	2
Chloroethane	ND		2.0		ug/L			03/07/23 16:52	2
Chloroform	ND		2.0		ug/L			03/07/23 16:52	2
Chloromethane	ND		4.0		ug/L			03/07/23 16:52	2
cis-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 16:52	2
cis-1,3-Dichloropropene	ND		2.0		ug/L			03/07/23 16:52	2
Cyclohexane	ND		10		ug/L			03/07/23 16:52	2
Dibromochloromethane	ND		2.0		ug/L			03/07/23 16:52	2
Dichlorodifluoromethane	ND		2.0		ug/L			03/07/23 16:52	2
Ethanol	7200		1500		ug/L			03/07/23 16:52	2
Ethylbenzene	ND		2.0		ug/L			03/07/23 16:52	2
Freon 113	ND		20		ug/L			03/07/23 16:52	2
Isopropylbenzene	ND		10		ug/L			03/07/23 16:52	2
m&p-Xylene	ND		10		ug/L			03/07/23 16:52	2
Methyl acetate	ND		10		ug/L			03/07/23 16:52	2
Methyl acrylate	ND		10		ug/L			03/07/23 16:52	2
Methyl tertiary butyl ether	ND		2.0		ug/L			03/07/23 16:52	2
Methylcyclohexane	ND		10		ug/L			03/07/23 16:52	2
Methylene Chloride	ND		2.0		ug/L			03/07/23 16:52	2
o-Xylene	ND		2.0		ug/L			03/07/23 16:52	2
Styrene	ND		10		ug/L			03/07/23 16:52	2
Tetrachloroethene	ND		2.0		ug/L			03/07/23 16:52	2
Toluene	ND		2.0		ug/L			03/07/23 16:52	2
trans-1,2-Dichloroethene	ND		4.0		ug/L			03/07/23 16:52	2
trans-1,3-Dichloropropene	ND		2.0		ug/L			03/07/23 16:52	2
Trichloroethene	ND		2.0		ug/L			03/07/23 16:52	2
Trichlorofluoromethane	ND		2.0		ug/L			03/07/23 16:52	2
Vinyl chloride	2.8		2.0		ug/L			03/07/23 16:52	2
Xylenes, Total	ND		2.0		ug/L			03/07/23 16:52	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 16:52	2
4-Bromofluorobenzene (Surr)	99		80 - 120		03/07/23 16:52	2
Dibromofluoromethane (Surr)	109		80 - 120		03/07/23 16:52	2
Toluene-d8 (Surr)	97		80 - 120		03/07/23 16:52	2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	5600		250		ug/L			03/07/23 17:14	50

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251079

Lab Sample ID: 410-117699-7

Date Collected: 03/06/23 17:46

Matrix: Water

Date Received: 03/06/23 23:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 17:14	50
4-Bromofluorobenzene (Surr)	97		80 - 120		03/07/23 17:14	50
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 17:14	50
Toluene-d8 (Surr)	99		80 - 120		03/07/23 17:14	50

Client Sample ID: WC-251782

Lab Sample ID: 410-117699-8

Date Collected: 03/06/23 17:53

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 17:36	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 17:36	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 17:36	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 17:36	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 17:36	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 17:36	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 17:36	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 17:36	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 17:36	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 17:36	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 17:36	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 17:36	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 17:36	1
2-Butanone	ND		10		ug/L			03/07/23 17:36	1
2-Ethylhexyl acrylate	ND		5.0		ug/L			03/07/23 17:36	1
2-Hexanone	ND		10		ug/L			03/07/23 17:36	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 17:36	1
Acetone	ND		20		ug/L			03/07/23 17:36	1
Benzene	ND		1.0		ug/L			03/07/23 17:36	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 17:36	1
Bromoform	ND		4.0		ug/L			03/07/23 17:36	1
Bromomethane	ND		1.0		ug/L			03/07/23 17:36	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 17:36	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 17:36	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 17:36	1
Chloroethane	ND		1.0		ug/L			03/07/23 17:36	1
Chloroform	ND		1.0		ug/L			03/07/23 17:36	1
Chloromethane	ND		2.0		ug/L			03/07/23 17:36	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 17:36	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 17:36	1
Cyclohexane	ND		5.0		ug/L			03/07/23 17:36	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 17:36	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 17:36	1
Ethanol	ND		750		ug/L			03/07/23 17:36	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 17:36	1
Freon 113	ND		10		ug/L			03/07/23 17:36	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 17:36	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 17:36	1
Methyl acetate	ND		5.0		ug/L			03/07/23 17:36	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251782

Lab Sample ID: 410-117699-8

Date Collected: 03/06/23 17:53

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		5.0		ug/L			03/07/23 17:36	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 17:36	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 17:36	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 17:36	1
o-Xylene	ND		1.0		ug/L			03/07/23 17:36	1
Styrene	ND		5.0		ug/L			03/07/23 17:36	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 17:36	1
Toluene	ND		1.0		ug/L			03/07/23 17:36	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 17:36	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 17:36	1
Trichloroethene	ND		1.0		ug/L			03/07/23 17:36	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 17:36	1
Vinyl chloride	ND		1.0		ug/L			03/07/23 17:36	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		03/07/23 17:36	1
4-Bromofluorobenzene (Surr)	98		80 - 120		03/07/23 17:36	1
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 17:36	1
Toluene-d8 (Surr)	97		80 - 120		03/07/23 17:36	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	1200		50		ug/L			03/07/23 17:58	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		03/07/23 17:58	10
4-Bromofluorobenzene (Surr)	97		80 - 120		03/07/23 17:58	10
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 17:58	10
Toluene-d8 (Surr)	100		80 - 120		03/07/23 17:58	10

Client Sample ID: WC-538B

Lab Sample ID: 410-117699-9

Date Collected: 03/06/23 17:56

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20		ug/L			03/07/23 18:20	20
1,1,1,2-Tetrachloroethane	ND		20		ug/L			03/07/23 18:20	20
1,1,2-Trichloroethane	ND		20		ug/L			03/07/23 18:20	20
1,1-Dichloroethane	ND		20		ug/L			03/07/23 18:20	20
1,1-Dichloroethene	ND		20		ug/L			03/07/23 18:20	20
1,2,4-Trichlorobenzene	ND		100		ug/L			03/07/23 18:20	20
1,2-Dibromo-3-Chloropropane	ND		100		ug/L			03/07/23 18:20	20
1,2-Dibromoethane	ND		20		ug/L			03/07/23 18:20	20
1,2-Dichlorobenzene	ND		100		ug/L			03/07/23 18:20	20
1,2-Dichloroethane	ND		20		ug/L			03/07/23 18:20	20
1,2-Dichloropropane	ND		20		ug/L			03/07/23 18:20	20
1,3-Dichlorobenzene	ND		100		ug/L			03/07/23 18:20	20
1,4-Dichlorobenzene	ND		100		ug/L			03/07/23 18:20	20
2-Butanone	ND		200		ug/L			03/07/23 18:20	20

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-538B

Lab Sample ID: 410-117699-9

Date Collected: 03/06/23 17:56

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Ethylhexyl acrylate	ND		100		ug/L			03/07/23 18:20	20
2-Hexanone	ND		200		ug/L			03/07/23 18:20	20
4-Methyl-2-pentanone	ND		200		ug/L			03/07/23 18:20	20
Acetone	ND		400		ug/L			03/07/23 18:20	20
Benzene	ND		20		ug/L			03/07/23 18:20	20
Bromodichloromethane	ND		20		ug/L			03/07/23 18:20	20
Bromoform	ND		80		ug/L			03/07/23 18:20	20
Bromomethane	ND		20		ug/L			03/07/23 18:20	20
Carbon disulfide	ND		100		ug/L			03/07/23 18:20	20
Carbon tetrachloride	ND		20		ug/L			03/07/23 18:20	20
Chlorobenzene	ND		20		ug/L			03/07/23 18:20	20
Chloroethane	ND		20		ug/L			03/07/23 18:20	20
Chloroform	ND		20		ug/L			03/07/23 18:20	20
Chloromethane	ND		40		ug/L			03/07/23 18:20	20
cis-1,2-Dichloroethene	ND		20		ug/L			03/07/23 18:20	20
cis-1,3-Dichloropropene	ND		20		ug/L			03/07/23 18:20	20
Cyclohexane	ND		100		ug/L			03/07/23 18:20	20
Dibromochloromethane	ND		20		ug/L			03/07/23 18:20	20
Dichlorodifluoromethane	ND		20		ug/L			03/07/23 18:20	20
Ethanol	ND		15000		ug/L			03/07/23 18:20	20
Ethylbenzene	ND		20		ug/L			03/07/23 18:20	20
Freon 113	ND		200		ug/L			03/07/23 18:20	20
Isopropylbenzene	ND		100		ug/L			03/07/23 18:20	20
m&p-Xylene	ND		100		ug/L			03/07/23 18:20	20
Methyl acetate	ND		100		ug/L			03/07/23 18:20	20
Methyl acrylate	ND		100		ug/L			03/07/23 18:20	20
Methyl tertiary butyl ether	ND		20		ug/L			03/07/23 18:20	20
Methylcyclohexane	ND		100		ug/L			03/07/23 18:20	20
Methylene Chloride	ND		20		ug/L			03/07/23 18:20	20
o-Xylene	ND		20		ug/L			03/07/23 18:20	20
Styrene	ND		100		ug/L			03/07/23 18:20	20
Tetrachloroethene	ND		20		ug/L			03/07/23 18:20	20
Toluene	ND		20		ug/L			03/07/23 18:20	20
trans-1,2-Dichloroethene	ND		40		ug/L			03/07/23 18:20	20
trans-1,3-Dichloropropene	ND		20		ug/L			03/07/23 18:20	20
Trichloroethene	ND		20		ug/L			03/07/23 18:20	20
Trichlorofluoromethane	ND		20		ug/L			03/07/23 18:20	20
Vinyl chloride	ND		20		ug/L			03/07/23 18:20	20
Xylenes, Total	ND		20		ug/L			03/07/23 18:20	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 18:20	20
4-Bromofluorobenzene (Surr)	99		80 - 120		03/07/23 18:20	20
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 18:20	20
Toluene-d8 (Surr)	98		80 - 120		03/07/23 18:20	20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyl acrylate	49000		1000		ug/L			03/07/23 18:42	200

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-538B

Lab Sample ID: 410-117699-9

Date Collected: 03/06/23 17:56

Matrix: Water

Date Received: 03/06/23 23:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		03/07/23 18:42	200
4-Bromofluorobenzene (Surr)	98		80 - 120		03/07/23 18:42	200
Dibromofluoromethane (Surr)	110		80 - 120		03/07/23 18:42	200
Toluene-d8 (Surr)	100		80 - 120		03/07/23 18:42	200

Client Sample ID: TRIP BLANK

Lab Sample ID: 410-117699-10

Date Collected: 03/06/23 00:00

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 13:12	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 13:12	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 13:12	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 13:12	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 13:12	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 13:12	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 13:12	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 13:12	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:12	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 13:12	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 13:12	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:12	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 13:12	1
2-Butanone	ND		10		ug/L			03/07/23 13:12	1
2-Ethylhexyl acrylate	ND		5.0		ug/L			03/07/23 13:12	1
2-Hexanone	ND		10		ug/L			03/07/23 13:12	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 13:12	1
Acetone	ND		20		ug/L			03/07/23 13:12	1
Benzene	ND		1.0		ug/L			03/07/23 13:12	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 13:12	1
Bromoform	ND		4.0		ug/L			03/07/23 13:12	1
Bromomethane	ND		1.0		ug/L			03/07/23 13:12	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 13:12	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 13:12	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 13:12	1
Chloroethane	ND		1.0		ug/L			03/07/23 13:12	1
Chloroform	ND		1.0		ug/L			03/07/23 13:12	1
Chloromethane	ND		2.0		ug/L			03/07/23 13:12	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 13:12	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:12	1
Cyclohexane	ND		5.0		ug/L			03/07/23 13:12	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 13:12	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 13:12	1
Ethanol	ND		750		ug/L			03/07/23 13:12	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 13:12	1
Freon 113	ND		10		ug/L			03/07/23 13:12	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 13:12	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 13:12	1
Methyl acetate	ND		5.0		ug/L			03/07/23 13:12	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 410-117699-10

Date Collected: 03/06/23 00:00

Matrix: Water

Date Received: 03/06/23 23:10

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		5.0		ug/L			03/07/23 13:12	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 13:12	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 13:12	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 13:12	1
n-Butyl acrylate	ND		5.0		ug/L			03/07/23 13:12	1
o-Xylene	ND		1.0		ug/L			03/07/23 13:12	1
Styrene	ND		5.0		ug/L			03/07/23 13:12	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 13:12	1
Toluene	ND		1.0		ug/L			03/07/23 13:12	1
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 13:12	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 13:12	1
Trichloroethene	ND		1.0		ug/L			03/07/23 13:12	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 13:12	1
Vinyl chloride	ND		1.0		ug/L			03/07/23 13:12	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 13:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					03/07/23 13:12	1
4-Bromofluorobenzene (Surr)	90		80 - 120					03/07/23 13:12	1
Dibromofluoromethane (Surr)	110		80 - 120					03/07/23 13:12	1
Toluene-d8 (Surr)	100		80 - 120					03/07/23 13:12	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL
		(80-120)	(80-120)	(80-120)	(80-120)
410-117699-1	WC-257204	107	105	111	98
410-117699-2	WC-251478	105	103	109	98
410-117699-2 - DL	WC-251478	105	99	109	99
410-117699-3	WC-251321	103	98	108	98
410-117699-3 - DL	WC-251321	106	96	108	99
410-117699-4	WC-251633	104	103	108	99
410-117699-5	WC-256094	104	103	108	99
410-117699-5 - DL	WC-256094	103	95	109	100
410-117699-6	WC-251091	105	102	108	98
410-117699-6 - DL	WC-251091	105	97	108	99
410-117699-7	WC-251079	105	99	109	97
410-117699-7 - DL	WC-251079	105	97	108	99
410-117699-8	WC-251782	104	98	108	97
410-117699-8 - DL	WC-251782	103	97	108	100
410-117699-9	WC-538B	105	99	108	98
410-117699-9 - DL	WC-538B	104	98	110	100
410-117699-10	TRIP BLANK	106	90	110	100
LCS 410-350829/5	Lab Control Sample	100	97	102	102
LCS 410-350829/7	Lab Control Sample	103	94	103	101
LCSD 410-350829/6	Lab Control Sample Dup	102	97	102	102
LCSD 410-350829/8	Lab Control Sample Dup	100	94	103	99
MB 410-350829/11	Method Blank	105	91	108	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-350829/11
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		1.0		ug/L			03/07/23 11:44	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			03/07/23 11:44	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/07/23 11:44	1
1,1-Dichloroethane	ND		1.0		ug/L			03/07/23 11:44	1
1,1-Dichloroethene	ND		1.0		ug/L			03/07/23 11:44	1
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/07/23 11:44	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			03/07/23 11:44	1
1,2-Dibromoethane	ND		1.0		ug/L			03/07/23 11:44	1
1,2-Dichlorobenzene	ND		5.0		ug/L			03/07/23 11:44	1
1,2-Dichloroethane	ND		1.0		ug/L			03/07/23 11:44	1
1,2-Dichloropropane	ND		1.0		ug/L			03/07/23 11:44	1
1,3-Dichlorobenzene	ND		5.0		ug/L			03/07/23 11:44	1
1,4-Dichlorobenzene	ND		5.0		ug/L			03/07/23 11:44	1
2-Butanone	ND		10		ug/L			03/07/23 11:44	1
2-Ethylhexyl acrylate	ND		5.0		ug/L			03/07/23 11:44	1
2-Hexanone	ND		10		ug/L			03/07/23 11:44	1
4-Methyl-2-pentanone	ND		10		ug/L			03/07/23 11:44	1
Acetone	ND		20		ug/L			03/07/23 11:44	1
Benzene	ND		1.0		ug/L			03/07/23 11:44	1
Bromodichloromethane	ND		1.0		ug/L			03/07/23 11:44	1
Bromoform	ND		4.0		ug/L			03/07/23 11:44	1
Bromomethane	ND		1.0		ug/L			03/07/23 11:44	1
Carbon disulfide	ND		5.0		ug/L			03/07/23 11:44	1
Carbon tetrachloride	ND		1.0		ug/L			03/07/23 11:44	1
Chlorobenzene	ND		1.0		ug/L			03/07/23 11:44	1
Chloroethane	ND		1.0		ug/L			03/07/23 11:44	1
Chloroform	ND		1.0		ug/L			03/07/23 11:44	1
Chloromethane	ND		2.0		ug/L			03/07/23 11:44	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/07/23 11:44	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 11:44	1
Cyclohexane	ND		5.0		ug/L			03/07/23 11:44	1
Dibromochloromethane	ND		1.0		ug/L			03/07/23 11:44	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/07/23 11:44	1
Ethanol	ND		750		ug/L			03/07/23 11:44	1
Ethylbenzene	ND		1.0		ug/L			03/07/23 11:44	1
Freon 113	ND		10		ug/L			03/07/23 11:44	1
Isopropylbenzene	ND		5.0		ug/L			03/07/23 11:44	1
m&p-Xylene	ND		5.0		ug/L			03/07/23 11:44	1
Methyl acetate	ND		5.0		ug/L			03/07/23 11:44	1
Methyl acrylate	ND		5.0		ug/L			03/07/23 11:44	1
Methyl tertiary butyl ether	ND		1.0		ug/L			03/07/23 11:44	1
Methylcyclohexane	ND		5.0		ug/L			03/07/23 11:44	1
Methylene Chloride	ND		1.0		ug/L			03/07/23 11:44	1
n-Butyl acrylate	ND		5.0		ug/L			03/07/23 11:44	1
o-Xylene	ND		1.0		ug/L			03/07/23 11:44	1
Styrene	ND		5.0		ug/L			03/07/23 11:44	1
Tetrachloroethene	ND		1.0		ug/L			03/07/23 11:44	1
Toluene	ND		1.0		ug/L			03/07/23 11:44	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-350829/11
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
trans-1,2-Dichloroethene	ND		2.0		ug/L			03/07/23 11:44	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/07/23 11:44	1
Trichloroethene	ND		1.0		ug/L			03/07/23 11:44	1
Trichlorofluoromethane	ND		1.0		ug/L			03/07/23 11:44	1
Vinyl chloride	ND		1.0		ug/L			03/07/23 11:44	1
Xylenes, Total	ND		1.0		ug/L			03/07/23 11:44	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/07/23 11:44	1
4-Bromofluorobenzene (Surr)	91		80 - 120		03/07/23 11:44	1
Dibromofluoromethane (Surr)	108		80 - 120		03/07/23 11:44	1
Toluene-d8 (Surr)	101		80 - 120		03/07/23 11:44	1

Lab Sample ID: LCS 410-350829/5
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	20.0	18.7		ug/L		94	67 - 126
1,1,1,2-Tetrachloroethane	20.0	20.0		ug/L		100	72 - 120
1,1,1,2-Trichloroethane	20.0	19.6		ug/L		98	80 - 120
1,1-Dichloroethane	20.0	19.4		ug/L		97	80 - 120
1,1-Dichloroethene	20.0	19.1		ug/L		95	80 - 131
1,2,4-Trichlorobenzene	20.0	18.0		ug/L		90	63 - 120
1,2-Dibromo-3-Chloropropane	20.0	17.6		ug/L		88	47 - 131
1,2-Dibromoethane	20.0	20.1		ug/L		101	77 - 120
1,2-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 120
1,2-Dichloroethane	20.0	19.1		ug/L		95	73 - 124
1,2-Dichloropropane	20.0	19.2		ug/L		96	80 - 120
1,3-Dichlorobenzene	20.0	19.2		ug/L		96	80 - 120
1,4-Dichlorobenzene	20.0	20.3		ug/L		101	80 - 120
2-Butanone	250	239		ug/L		96	59 - 135
2-Hexanone	250	263		ug/L		105	56 - 135
4-Methyl-2-pentanone	250	255		ug/L		102	62 - 133
Acetone	250	266		ug/L		107	54 - 157
Benzene	20.0	19.7		ug/L		99	80 - 120
Bromodichloromethane	20.0	19.3		ug/L		96	71 - 120
Bromoform	20.0	20.0		ug/L		100	51 - 120
Bromomethane	20.0	17.7		ug/L		88	53 - 128
Carbon disulfide	20.0	19.0		ug/L		95	65 - 128
Carbon tetrachloride	20.0	18.9		ug/L		94	64 - 134
Chlorobenzene	20.0	19.0		ug/L		95	80 - 120
Chloroethane	20.0	18.8		ug/L		94	55 - 123
Chloroform	20.0	19.0		ug/L		95	80 - 120
Chloromethane	20.0	16.9		ug/L		85	56 - 121
cis-1,2-Dichloroethene	20.0	20.2		ug/L		101	80 - 125
cis-1,3-Dichloropropene	20.0	18.3		ug/L		91	75 - 120
Cyclohexane	20.0	15.6		ug/L		78	68 - 126

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-350829/5
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromochloromethane	20.0	20.1		ug/L		101	71 - 120
Dichlorodifluoromethane	20.0	14.2		ug/L		71	41 - 127
Ethylbenzene	20.0	18.7		ug/L		94	80 - 120
Freon 113	20.0	16.6		ug/L		83	73 - 139
Isopropylbenzene	20.0	18.6		ug/L		93	80 - 120
m&p-Xylene	40.0	37.8		ug/L		94	80 - 120
Methyl acetate	20.0	24.6		ug/L		123	54 - 136
Methyl tertiary butyl ether	20.0	16.8		ug/L		84	69 - 122
Methylcyclohexane	20.0	15.5		ug/L		77	67 - 121
Methylene Chloride	20.0	19.7		ug/L		99	80 - 120
o-Xylene	20.0	18.0		ug/L		90	80 - 120
Styrene	20.0	18.8		ug/L		94	80 - 120
Tetrachloroethene	20.0	19.3		ug/L		97	80 - 120
Toluene	20.0	19.2		ug/L		96	80 - 120
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	80 - 126
trans-1,3-Dichloropropene	20.0	18.6		ug/L		93	67 - 120
Trichloroethene	20.0	19.2		ug/L		96	80 - 120
Trichlorofluoromethane	20.0	14.2		ug/L		71	55 - 135
Vinyl chloride	20.0	16.5		ug/L		83	56 - 120
Xylenes, Total	60.0	55.8		ug/L		93	80 - 120

Surrogate	%Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: LCS 410-350829/7
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Ethylhexyl acrylate	20.0	14.7		ug/L		74	70 - 130
Ethanol	1000	1100		ug/L		110	31 - 180
Methyl acrylate	20.0	18.3		ug/L		92	70 - 130
n-Butyl acrylate	20.0	15.5		ug/L		77	70 - 130

Surrogate	%Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	101		80 - 120

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-350829/6
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD
									Limit
1,1,1-Trichloroethane	20.0	18.7		ug/L		94	67 - 126	0	30
1,1,2,2-Tetrachloroethane	20.0	19.6		ug/L		98	72 - 120	2	30
1,1,2-Trichloroethane	20.0	19.0		ug/L		95	80 - 120	3	30
1,1-Dichloroethane	20.0	19.1		ug/L		95	80 - 120	1	30
1,1-Dichloroethene	20.0	19.5		ug/L		97	80 - 131	2	30
1,2,4-Trichlorobenzene	20.0	18.2		ug/L		91	63 - 120	2	30
1,2-Dibromo-3-Chloropropane	20.0	16.9		ug/L		85	47 - 131	4	30
1,2-Dibromoethane	20.0	19.5		ug/L		97	77 - 120	3	30
1,2-Dichlorobenzene	20.0	18.7		ug/L		94	80 - 120	2	30
1,2-Dichloroethane	20.0	19.0		ug/L		95	73 - 124	1	30
1,2-Dichloropropane	20.0	19.0		ug/L		95	80 - 120	1	30
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 120	1	30
1,4-Dichlorobenzene	20.0	20.2		ug/L		101	80 - 120	1	30
2-Butanone	250	237		ug/L		95	59 - 135	1	30
2-Hexanone	250	255		ug/L		102	56 - 135	3	30
4-Methyl-2-pentanone	250	247		ug/L		99	62 - 133	3	30
Acetone	250	262		ug/L		105	54 - 157	2	30
Benzene	20.0	19.6		ug/L		98	80 - 120	1	30
Bromodichloromethane	20.0	19.3		ug/L		97	71 - 120	0	30
Bromoform	20.0	19.3		ug/L		96	51 - 120	4	30
Bromomethane	20.0	17.7		ug/L		89	53 - 128	0	30
Carbon disulfide	20.0	19.2		ug/L		96	65 - 128	1	30
Carbon tetrachloride	20.0	18.7		ug/L		94	64 - 134	1	30
Chlorobenzene	20.0	18.8		ug/L		94	80 - 120	1	30
Chloroethane	20.0	19.0		ug/L		95	55 - 123	1	30
Chloroform	20.0	18.8		ug/L		94	80 - 120	1	30
Chloromethane	20.0	17.2		ug/L		86	56 - 121	2	30
cis-1,2-Dichloroethene	20.0	20.3		ug/L		102	80 - 125	0	30
cis-1,3-Dichloropropene	20.0	18.1		ug/L		91	75 - 120	1	30
Cyclohexane	20.0	16.0		ug/L		80	68 - 126	3	30
Dibromochloromethane	20.0	19.6		ug/L		98	71 - 120	3	30
Dichlorodifluoromethane	20.0	14.5		ug/L		73	41 - 127	3	30
Ethylbenzene	20.0	18.4		ug/L		92	80 - 120	2	30
Freon 113	20.0	16.4		ug/L		82	73 - 139	1	30
Isopropylbenzene	20.0	18.4		ug/L		92	80 - 120	1	30
m&p-Xylene	40.0	37.5		ug/L		94	80 - 120	1	30
Methyl acetate	20.0	19.5		ug/L		98	54 - 136	23	30
Methyl tertiary butyl ether	20.0	16.7		ug/L		84	69 - 122	1	30
Methylcyclohexane	20.0	15.6		ug/L		78	67 - 121	1	30
Methylene Chloride	20.0	19.5		ug/L		97	80 - 120	1	30
o-Xylene	20.0	18.0		ug/L		90	80 - 120	0	30
Styrene	20.0	18.6		ug/L		93	80 - 120	1	30
Tetrachloroethene	20.0	18.6		ug/L		93	80 - 120	4	30
Toluene	20.0	19.0		ug/L		95	80 - 120	1	30
trans-1,2-Dichloroethene	20.0	19.0		ug/L		95	80 - 126	1	30
trans-1,3-Dichloropropene	20.0	18.6		ug/L		93	67 - 120	0	30
Trichloroethene	20.0	18.9		ug/L		95	80 - 120	1	30
Trichlorofluoromethane	20.0	14.4		ug/L		72	55 - 135	1	30

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-350829/6
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	20.0	16.6		ug/L		83	56 - 120	0	30
Xylenes, Total	60.0	55.5		ug/L		93	80 - 120	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: LCSD 410-350829/8
Matrix: Water
Analysis Batch: 350829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Ethylhexyl acrylate	20.0	14.7		ug/L		73	70 - 130	0	30
Ethanol	1000	1070		ug/L		107	31 - 180	3	30
Methyl acrylate	20.0	17.5		ug/L		88	70 - 130	5	30
n-Butyl acrylate	20.0	14.9		ug/L		74	70 - 130	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	99		80 - 120

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

GC/MS VOA

Analysis Batch: 350829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-117699-1	WC-257204	Total/NA	Water	8260D	
410-117699-2	WC-251478	Total/NA	Water	8260D	
410-117699-2 - DL	WC-251478	Total/NA	Water	8260D	
410-117699-3	WC-251321	Total/NA	Water	8260D	
410-117699-3 - DL	WC-251321	Total/NA	Water	8260D	
410-117699-4	WC-251633	Total/NA	Water	8260D	
410-117699-5	WC-256094	Total/NA	Water	8260D	
410-117699-5 - DL	WC-256094	Total/NA	Water	8260D	
410-117699-6	WC-251091	Total/NA	Water	8260D	
410-117699-6 - DL	WC-251091	Total/NA	Water	8260D	
410-117699-7	WC-251079	Total/NA	Water	8260D	
410-117699-7 - DL	WC-251079	Total/NA	Water	8260D	
410-117699-8	WC-251782	Total/NA	Water	8260D	
410-117699-8 - DL	WC-251782	Total/NA	Water	8260D	
410-117699-9	WC-538B	Total/NA	Water	8260D	
410-117699-9 - DL	WC-538B	Total/NA	Water	8260D	
410-117699-10	TRIP BLANK	Total/NA	Water	8260D	
MB 410-350829/11	Method Blank	Total/NA	Water	8260D	
LCS 410-350829/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 410-350829/7	Lab Control Sample	Total/NA	Water	8260D	
LCSD 410-350829/6	Lab Control Sample Dup	Total/NA	Water	8260D	
LCSD 410-350829/8	Lab Control Sample Dup	Total/NA	Water	8260D	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-257204

Lab Sample ID: 410-117699-1

Date Collected: 03/06/23 17:05

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 13:34

Client Sample ID: WC-251478

Lab Sample ID: 410-117699-2

Date Collected: 03/06/23 17:23

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 14:40
Total/NA	Analysis	8260D	DL	10	350829	TQ4J	ELLE	03/07/23 15:02

Client Sample ID: WC-251321

Lab Sample ID: 410-117699-3

Date Collected: 03/06/23 17:25

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 15:24
Total/NA	Analysis	8260D	DL	10	350829	TQ4J	ELLE	03/07/23 15:46

Client Sample ID: WC-251633

Lab Sample ID: 410-117699-4

Date Collected: 03/06/23 17:32

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 13:56

Client Sample ID: WC-256094

Lab Sample ID: 410-117699-5

Date Collected: 03/06/23 17:36

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 14:18
Total/NA	Analysis	8260D	DL	10	350829	TQ4J	ELLE	03/07/23 19:04

Client Sample ID: WC-251091

Lab Sample ID: 410-117699-6

Date Collected: 03/06/23 17:40

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 16:08
Total/NA	Analysis	8260D	DL	20	350829	TQ4J	ELLE	03/07/23 16:30

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Client Sample ID: WC-251079

Lab Sample ID: 410-117699-7

Date Collected: 03/06/23 17:46

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	350829	TQ4J	ELLE	03/07/23 16:52
Total/NA	Analysis	8260D	DL	50	350829	TQ4J	ELLE	03/07/23 17:14

Client Sample ID: WC-251782

Lab Sample ID: 410-117699-8

Date Collected: 03/06/23 17:53

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 17:36
Total/NA	Analysis	8260D	DL	10	350829	TQ4J	ELLE	03/07/23 17:58

Client Sample ID: WC-538B

Lab Sample ID: 410-117699-9

Date Collected: 03/06/23 17:56

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		20	350829	TQ4J	ELLE	03/07/23 18:20
Total/NA	Analysis	8260D	DL	200	350829	TQ4J	ELLE	03/07/23 18:42

Client Sample ID: TRIP BLANK

Lab Sample ID: 410-117699-10

Date Collected: 03/06/23 00:00

Matrix: Water

Date Received: 03/06/23 23:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	350829	TQ4J	ELLE	03/07/23 13:12

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-23 *
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	0001.01	11-30-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS-ER East Palestine, OH

Job ID: 410-117699-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-117699-1	WC-257204	Water	03/06/23 17:05	03/06/23 23:10
410-117699-2	WC-251478	Water	03/06/23 17:23	03/06/23 23:10
410-117699-3	WC-251321	Water	03/06/23 17:25	03/06/23 23:10
410-117699-4	WC-251633	Water	03/06/23 17:32	03/06/23 23:10
410-117699-5	WC-256094	Water	03/06/23 17:36	03/06/23 23:10
410-117699-6	WC-251091	Water	03/06/23 17:40	03/06/23 23:10
410-117699-7	WC-251079	Water	03/06/23 17:46	03/06/23 23:10
410-117699-8	WC-251782	Water	03/06/23 17:53	03/06/23 23:10
410-117699-9	WC-538B	Water	03/06/23 17:56	03/06/23 23:10
410-117699-10	TRIP BLANK	Water	03/06/23 00:00	03/06/23 23:10

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Login Sample Receipt Checklist

Client: Norfolk Southern Corporation

Job Number: 410-117699-1

Login Number: 117699

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Metzger, Katherine A

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	True	

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Carolyn Grogan
ARCADIS U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus, Ohio 43235

Generated 2/11/2023 11:48:12 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180173-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/11/2023 11:48:12 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	12
Surrogate Summary	34
QC Sample Results	36
QC Association Summary	53
Lab Chronicle	57
Certification Summary	60
Chain of Custody	61

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Eurofins Canton

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Job ID: 240-180173-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180173-1

Comments

No additional comments.

Receipt

The samples were received on 2/10/2023 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.2° C, 1.2° C, 2.5° C and 3.8° C.

GC/MS VOA

Method 8260D: Surrogate recovery for the following sample was outside control limits: WC-01/2023-02-09/ (240-180173-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-561656 was outside the method criteria for the following analyte: Dichlorodifluoromethane. An MRL standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-561615 was outside the method criteria for the following analytes: Bromomethane, Chloromethane and Dichlorodifluoromethane. An MRL standard at or below the reporting limit (RL) was analyzed with the affected samples: TRIP BLANK (240-180173-6), (CCV 240-561615/4), (CCV 240-561615/5), (CCVIS 240-561615/3), (LCS 240-561615/11), (LCS 240-561615/6), (LCS 240-561615/7) and (MB 240-561615/9) and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: WC-01/2023-02-09/ (240-180173-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted due to the nature of the sample matrix: WC-01/2023-02-09/ (240-180173-1), WC-02/2023-02-09/ (240-180173-2), WC-03/2023-02-09/ (240-180173-3), WC-04/2023-02-09/ (240-180173-4) and WC-05/2023-02-09/ (240-180173-5). Elevated reporting limits (RLs) are provided.

Method 8270E: The RL's for Benzaldehyde and Hexachlorobenzene are below the low point of the calibration. The RL's are supported by the MDL: WC-01/2023-02-09/ (240-180173-1), WC-02/2023-02-09/ (240-180173-2), WC-03/2023-02-09/ (240-180173-3), WC-04/2023-02-09/ (240-180173-4) and WC-05/2023-02-09/ (240-180173-5).

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-561702 recovered above the upper control limit for 3-Nitroaniline, 4-Nitrophenol, Benzaldehyde, Bis(2-chloroethyl)ether, and N-Nitrosodi-n-propylamine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-01/2023-02-09/ (240-180173-1), WC-02/2023-02-09/ (240-180173-2), WC-03/2023-02-09/ (240-180173-3), WC-04/2023-02-09/ (240-180173-4) and WC-05/2023-02-09/ (240-180173-5).

Method 8270E: The laboratory control sample (LCS) for preparation batch 240-561604 and analytical batch 240-561702 recovered outside control limits for the following analytes: Benzaldehyde and 4-Nitroaniline. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8015D: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-01/2023-02-09/ (240-180173-1), WC-02/2023-02-09/ (240-180173-2) and WC-03/2023-02-09/ (240-180173-3). Elevated reporting

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Job ID: 240-180173-1 (Continued)

Laboratory: Eurofins Canton (Continued)

limits (RLs) are provided.

Method 8015D: The following sample required a dilution due to an abundance of target analyte: WC-01/2023-02-09/ (240-180173-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8015D: The following sample was diluted to bring the concentration of target analytes within the calibration range: WC-04/2023-02-09/ (240-180173-4). Elevated reporting limits (RLs) are provided.

Method 8015D: The following sample required a dilution due to the nature of the sample matrix: WC-04/2023-02-09/ (240-180173-4). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 240-561611 was outside control limits. Sample non-homogeneity is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method 3511: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-561603.

Method 3511: Due to the matrix, the following samples could not be concentrated to the final method required volume: WC-01/2023-02-09/ (240-180173-1) and WC-04/2023-02-09/ (240-180173-4). The reporting limits (RLs) are elevated proportionately.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1010B	Ignitability, Pinsky-Martens Closed-Cup Method	SW846	EET CAN
2540D-2015	Total Suspended Solids (Dried at 103-105°C)	SM	EET CAN
5310 C-2014	Total Organic Carbon/Persulfate - Ultrav	SM	EET CAN
9040C	pH	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C LVI	Liquid-Liquid Extraction (Separatory Funnel) LVI	SW846	EET CAN
3511	Microextraction of Organic Compounds	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180173-1	WC-01/2023-02-09/	Water	02/09/23 15:50	02/10/23 07:00
240-180173-2	WC-02/2023-02-09/	Water	02/09/23 16:30	02/10/23 07:00
240-180173-3	WC-03/2023-02-09/	Water	02/09/23 18:20	02/10/23 07:00
240-180173-4	WC-04/2023-02-09/	Water	02/09/23 18:30	02/10/23 07:00
240-180173-5	WC-05/2023-02-09/	Water	02/09/23 18:40	02/10/23 07:00
240-180173-6	TRIP BLANK	Water	02/09/23 00:00	02/10/23 07:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/

Lab Sample ID: 240-180173-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	52		20	2.3	ug/L	2		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	15	J	20	2.0	ug/L	2		8260D	Total/NA
Acetone	850		20	11	ug/L	2		8260D	Total/NA
Benzene	2.8		2.0	0.84	ug/L	2		8260D	Total/NA
Ethylbenzene	1.1	J	2.0	0.84	ug/L	2		8260D	Total/NA
Methylcyclohexane	1.8	J	2.0	0.66	ug/L	2		8260D	Total/NA
Toluene	2.8		2.0	0.88	ug/L	2		8260D	Total/NA
Vinyl chloride	22		2.0	0.90	ug/L	2		8260D	Total/NA
Xylenes, Total	6.8		4.0	0.84	ug/L	2		8260D	Total/NA
2-Methylnaphthalene	21		18	9.9	ug/L	100		8270E	Total/NA
Acenaphthene	20		18	15	ug/L	100		8270E	Total/NA
Acenaphthylene	19		18	11	ug/L	100		8270E	Total/NA
Anthracene	25		18	12	ug/L	100		8270E	Total/NA
Benzo[a]anthracene	23		18	15	ug/L	100		8270E	Total/NA
Chrysene	23		18	17	ug/L	100		8270E	Total/NA
Fluoranthene	82		18	14	ug/L	100		8270E	Total/NA
Fluorene	23		18	15	ug/L	100		8270E	Total/NA
Naphthalene	40		18	9.7	ug/L	100		8270E	Total/NA
Phenanthrene	100		18	15	ug/L	100		8270E	Total/NA
Pyrene	84		18	16	ug/L	100		8270E	Total/NA
Diesel Range Organics [C10 - C28]	980000	B	130000	17000	ug/L	200		8015D	Total/NA
Arsenic	0.024	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.022	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Chromium	0.058		0.050	0.0040	mg/L	1		6010D	TCLP
Lead	0.0031	J	0.050	0.0028	mg/L	1		6010D	TCLP
Selenium	0.018	J	0.050	0.0060	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Fahrenheit	1		1010B	Total/NA
Total Suspended Solids	18000		400	100	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	7000		200	70	mg/L	200		5310 C-2014	Total/NA
corrosivity by pH	8.8	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-02/2023-02-09/

Lab Sample ID: 240-180173-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	8.4	J	20	2.3	ug/L	2		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	5.5	J	20	2.0	ug/L	2		8260D	Total/NA
Acetone	20		20	11	ug/L	2		8260D	Total/NA
Benzene	1.4	J	2.0	0.84	ug/L	2		8260D	Total/NA
Ethylbenzene	8.2		2.0	0.84	ug/L	2		8260D	Total/NA
Isopropylbenzene	2.4		2.0	0.98	ug/L	2		8260D	Total/NA
Methylcyclohexane	2.0		2.0	0.66	ug/L	2		8260D	Total/NA
Toluene	20		2.0	0.88	ug/L	2		8260D	Total/NA
Vinyl chloride	35		2.0	0.90	ug/L	2		8260D	Total/NA
Xylenes, Total	45		4.0	0.84	ug/L	2		8260D	Total/NA
Diesel Range Organics [C10 - C28]	160000	B	25000	3300	ug/L	50		8015D	Total/NA
Barium	0.078	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00021	J	0.050	0.00020	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	200		6.7	1.7	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	410		20	7.0	mg/L	20		5310 C-2014	Total/NA
corrosivity by pH	8.2	HF	0.1	0.1	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.4	J	5.0	2.1	ug/L	5		8260D	Total/NA
Ethylbenzene	3.3	J	5.0	2.1	ug/L	5		8260D	Total/NA
Styrene	4.4	J	5.0	2.3	ug/L	5		8260D	Total/NA
Toluene	6.6		5.0	2.2	ug/L	5		8260D	Total/NA
Vinyl chloride	910		5.0	2.3	ug/L	5		8260D	Total/NA
Xylenes, Total	32		10	2.1	ug/L	5		8260D	Total/NA
2-Methylnaphthalene	24		8.9	5.0	ug/L	50		8270E	Total/NA
Naphthalene	14		8.9	4.9	ug/L	50		8270E	Total/NA
Diesel Range Organics [C10 - C28]	28000	B	2400	330	ug/L	5		8015D	Total/NA
Barium	0.025	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	89		8.0	2.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	900		50	17	mg/L	50		5310 C-2014	Total/NA
corrosivity by pH	7.8	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	10	J	20	2.3	ug/L	2		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	7.2	J	20	2.0	ug/L	2		8260D	Total/NA
Acetone	15	J	20	11	ug/L	2		8260D	Total/NA
Benzene	1.8	J	2.0	0.84	ug/L	2		8260D	Total/NA
Vinyl chloride	290		2.0	0.90	ug/L	2		8260D	Total/NA
Xylenes, Total	3.0	J	4.0	0.84	ug/L	2		8260D	Total/NA
Diesel Range Organics [C10 - C28]	2300000	B	350000	47000	ug/L	500		8015D	Total/NA
Barium	0.036	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00027	J	0.050	0.00020	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	11000		80	20	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	540		20	7.0	mg/L	20		5310 C-2014	Total/NA
corrosivity by pH	7.5	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	4.6	J	20	2.3	ug/L	2		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	3.6	J	20	2.0	ug/L	2		8260D	Total/NA
Benzene	1.5	J	2.0	0.84	ug/L	2		8260D	Total/NA
Toluene	1.1	J F2	2.0	0.88	ug/L	2		8260D	Total/NA
Vinyl chloride	160		2.0	0.90	ug/L	2		8260D	Total/NA
Xylenes, Total	6.7	F1 F2	4.0	0.84	ug/L	2		8260D	Total/NA
2-Methylnaphthalene	13		3.6	2.0	ug/L	20		8270E	Total/NA
Naphthalene	6.3		3.6	1.9	ug/L	20		8270E	Total/NA
Diesel Range Organics [C10 - C28]	5600	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.038	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	28		4.0	1.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	280		20	7.0	mg/L	20		5310 C-2014	Total/NA
corrosivity by pH	7.5	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-180173-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/

Lab Sample ID: 240-180173-1

Date Collected: 02/09/23 15:50

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 21:23	2
1,1,2,2-Tetrachloroethane	ND		2.0	1.2	ug/L			02/10/23 21:23	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.82	ug/L			02/10/23 21:23	2
1,1,2-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 21:23	2
1,1-Dichloroethane	ND		2.0	0.94	ug/L			02/10/23 21:23	2
1,1-Dichloroethene	ND		2.0	0.98	ug/L			02/10/23 21:23	2
1,2,4-Trichlorobenzene	ND		2.0	1.5	ug/L			02/10/23 21:23	2
1,2-Dibromo-3-Chloropropane	ND		4.0	1.8	ug/L			02/10/23 21:23	2
Ethylene Dibromide	ND		2.0	0.82	ug/L			02/10/23 21:23	2
1,2-Dichlorobenzene	ND		2.0	0.96	ug/L			02/10/23 21:23	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			02/10/23 21:23	2
1,2-Dichloropropane	ND		2.0	0.94	ug/L			02/10/23 21:23	2
1,3-Dichlorobenzene	ND		2.0	0.90	ug/L			02/10/23 21:23	2
1,4-Dichlorobenzene	ND		2.0	0.82	ug/L			02/10/23 21:23	2
2-Butanone (MEK)	52		20	2.3	ug/L			02/10/23 21:23	2
2-Hexanone	ND		20	2.2	ug/L			02/10/23 21:23	2
4-Methyl-2-pentanone (MIBK)	15 J		20	2.0	ug/L			02/10/23 21:23	2
Acetone	850		20	11	ug/L			02/10/23 21:23	2
Benzene	2.8		2.0	0.84	ug/L			02/10/23 21:23	2
Dichlorobromomethane	ND		2.0	0.34	ug/L			02/10/23 21:23	2
Bromoform	ND		2.0	1.5	ug/L			02/10/23 21:23	2
Bromomethane	ND		2.0	0.84	ug/L			02/10/23 21:23	2
Carbon disulfide	ND		2.0	1.2	ug/L			02/10/23 21:23	2
Carbon tetrachloride	ND		2.0	0.52	ug/L			02/10/23 21:23	2
Chlorobenzene	ND		2.0	0.76	ug/L			02/10/23 21:23	2
Chloroethane	ND		2.0	1.7	ug/L			02/10/23 21:23	2
Chloroform	ND		2.0	0.94	ug/L			02/10/23 21:23	2
Chloromethane	ND		2.0	1.3	ug/L			02/10/23 21:23	2
cis-1,2-Dichloroethene	ND		2.0	0.92	ug/L			02/10/23 21:23	2
cis-1,3-Dichloropropene	ND		2.0	1.2	ug/L			02/10/23 21:23	2
Cyclohexane	ND		2.0	0.96	ug/L			02/10/23 21:23	2
Chlorodibromomethane	ND		2.0	0.78	ug/L			02/10/23 21:23	2
Dichlorodifluoromethane	ND		2.0	0.70	ug/L			02/10/23 21:23	2
Ethylbenzene	1.1 J		2.0	0.84	ug/L			02/10/23 21:23	2
Isopropylbenzene	ND		2.0	0.98	ug/L			02/10/23 21:23	2
Methyl acetate	ND		20	3.4	ug/L			02/10/23 21:23	2
Methyl tert-butyl ether	ND		2.0	0.94	ug/L			02/10/23 21:23	2
Methylcyclohexane	1.8 J		2.0	0.66	ug/L			02/10/23 21:23	2
Methylene Chloride	ND		10	5.2	ug/L			02/10/23 21:23	2
Styrene	ND		2.0	0.90	ug/L			02/10/23 21:23	2
Tetrachloroethene	ND		2.0	0.88	ug/L			02/10/23 21:23	2
Toluene	2.8		2.0	0.88	ug/L			02/10/23 21:23	2
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/L			02/10/23 21:23	2
trans-1,3-Dichloropropene	ND		2.0	1.3	ug/L			02/10/23 21:23	2
Trichloroethene	ND		2.0	0.88	ug/L			02/10/23 21:23	2
Trichlorofluoromethane	ND		2.0	0.90	ug/L			02/10/23 21:23	2
Vinyl chloride	22		2.0	0.90	ug/L			02/10/23 21:23	2
Xylenes, Total	6.8		4.0	0.84	ug/L			02/10/23 21:23	2

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/

Lab Sample ID: 240-180173-1

Date Collected: 02/09/23 15:50

Matrix: Water

Date Received: 02/10/23 07:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		78 - 122		02/10/23 16:45	2500
Toluene-d8 (Surr)	89		78 - 122		02/10/23 20:18	5000
Toluene-d8 (Surr)	127	S1+	78 - 122		02/10/23 21:23	2
Dibromofluoromethane (Surr)	103		73 - 120		02/10/23 16:45	2500
Dibromofluoromethane (Surr)	98		73 - 120		02/10/23 20:18	5000
Dibromofluoromethane (Surr)	96		73 - 120		02/10/23 21:23	2
4-Bromofluorobenzene (Surr)	87		56 - 136		02/10/23 16:45	2500
4-Bromofluorobenzene (Surr)	81		56 - 136		02/10/23 20:18	5000
4-Bromofluorobenzene (Surr)	94		56 - 136		02/10/23 21:23	2
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		02/10/23 16:45	2500
1,2-Dichloroethane-d4 (Surr)	85		62 - 137		02/10/23 20:18	5000
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		02/10/23 21:23	2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		89	44	ug/L		02/10/23 08:46	02/11/23 08:16	100
bis (2-chloroisopropyl) ether	ND		89	49	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4,5-Trichlorophenol	ND		450	180	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4,6-Trichlorophenol	ND		450	160	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4-Dichlorophenol	ND		180	23	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4-Dimethylphenol	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4-Dinitrophenol	ND		890	550	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,4-Dinitrotoluene	ND		450	180	ug/L		02/10/23 08:46	02/11/23 08:16	100
2,6-Dinitrotoluene	ND		450	190	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Chloronaphthalene	ND		89	43	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Chlorophenol	ND		89	24	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Methylnaphthalene	21		18	9.9	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Methylphenol	ND		89	19	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Nitroaniline	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:16	100
2-Nitrophenol	ND		180	50	ug/L		02/10/23 08:46	02/11/23 08:16	100
3,3'-Dichlorobenzidine	ND		450	100	ug/L		02/10/23 08:46	02/11/23 08:16	100
3-Nitroaniline	ND		180	51	ug/L		02/10/23 08:46	02/11/23 08:16	100
4,6-Dinitro-2-methylphenol	ND		450	250	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Bromophenyl phenyl ether	ND		180	45	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Chloro-3-methylphenol	ND		180	26	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Chloroaniline	ND		180	28	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Chlorophenyl phenyl ether	ND		180	49	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Nitroaniline	ND	*+	180	82	ug/L		02/10/23 08:46	02/11/23 08:16	100
4-Nitrophenol	ND		890	190	ug/L		02/10/23 08:46	02/11/23 08:16	100
Acenaphthene	20		18	15	ug/L		02/10/23 08:46	02/11/23 08:16	100
Acenaphthylene	19		18	11	ug/L		02/10/23 08:46	02/11/23 08:16	100
Acetophenone	ND		89	33	ug/L		02/10/23 08:46	02/11/23 08:16	100
Anthracene	25		18	12	ug/L		02/10/23 08:46	02/11/23 08:16	100
Atrazine	ND		180	85	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzaldehyde	ND	*+	180	68	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzo[a]anthracene	23		18	15	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzo[a]pyrene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzo[b]fluoranthene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzo[g,h,i]perylene	ND		18	16	ug/L		02/10/23 08:46	02/11/23 08:16	100
Benzo[k]fluoranthene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 08:16	100

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/

Lab Sample ID: 240-180173-1

Date Collected: 02/09/23 15:50

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		89	41	ug/L		02/10/23 08:46	02/11/23 08:16	100
Bis(2-chloroethyl)ether	ND		89	36	ug/L		02/10/23 08:46	02/11/23 08:16	100
Bis(2-ethylhexyl) phthalate	ND		450	200	ug/L		02/10/23 08:46	02/11/23 08:16	100
Butyl benzyl phthalate	ND		180	59	ug/L		02/10/23 08:46	02/11/23 08:16	100
Caprolactam	ND		450	83	ug/L		02/10/23 08:46	02/11/23 08:16	100
Carbazole	ND		89	44	ug/L		02/10/23 08:46	02/11/23 08:16	100
Chrysene	23		18	17	ug/L		02/10/23 08:46	02/11/23 08:16	100
Dibenz(a,h)anthracene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 08:16	100
Dibenzofuran	ND		89	50	ug/L		02/10/23 08:46	02/11/23 08:16	100
Diethyl phthalate	ND		450	340	ug/L		02/10/23 08:46	02/11/23 08:16	100
Dimethyl phthalate	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:16	100
Di-n-butyl phthalate	ND		450	160	ug/L		02/10/23 08:46	02/11/23 08:16	100
Di-n-octyl phthalate	ND		180	73	ug/L		02/10/23 08:46	02/11/23 08:16	100
Fluoranthene	82		18	14	ug/L		02/10/23 08:46	02/11/23 08:16	100
Fluorene	23		18	15	ug/L		02/10/23 08:46	02/11/23 08:16	100
Hexachlorobenzene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 08:16	100
Hexachlorobutadiene	ND		89	48	ug/L		02/10/23 08:46	02/11/23 08:16	100
Hexachlorocyclopentadiene	ND		890	160	ug/L		02/10/23 08:46	02/11/23 08:16	100
Hexachloroethane	ND		89	35	ug/L		02/10/23 08:46	02/11/23 08:16	100
Indeno[1,2,3-cd]pyrene	ND		18	12	ug/L		02/10/23 08:46	02/11/23 08:16	100
Isophorone	ND		89	29	ug/L		02/10/23 08:46	02/11/23 08:16	100
N-Nitrosodi-n-propylamine	ND		89	23	ug/L		02/10/23 08:46	02/11/23 08:16	100
N-Nitrosodiphenylamine	ND		89	39	ug/L		02/10/23 08:46	02/11/23 08:16	100
Naphthalene	40		18	9.7	ug/L		02/10/23 08:46	02/11/23 08:16	100
Nitrobenzene	ND		89	46	ug/L		02/10/23 08:46	02/11/23 08:16	100
Pentachlorophenol	ND		890	280	ug/L		02/10/23 08:46	02/11/23 08:16	100
Phenanthrene	100		18	15	ug/L		02/10/23 08:46	02/11/23 08:16	100
Phenol	ND		89	11	ug/L		02/10/23 08:46	02/11/23 08:16	100
Pyrene	84		18	16	ug/L		02/10/23 08:46	02/11/23 08:16	100
3 & 4 Methylphenol	ND		180	17	ug/L		02/10/23 08:46	02/11/23 08:16	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/10/23 08:46	02/11/23 08:16	100
Phenol-d5 (Surr)	0	S1-	26 - 120	02/10/23 08:46	02/11/23 08:16	100
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/10/23 08:46	02/11/23 08:16	100
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/10/23 08:46	02/11/23 08:16	100
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/10/23 08:46	02/11/23 08:16	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/10/23 08:46	02/11/23 08:16	100

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	980000	B	130000	17000	ug/L		02/10/23 08:41	02/10/23 11:27	200
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	419	S1+	52 - 121	02/10/23 08:41	02/10/23 11:27	200			

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.024	J	0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 09:36	1
Barium	0.022	J B	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 09:36	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/

Lab Sample ID: 240-180173-1

Date Collected: 02/09/23 15:50

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 09:36	1
Chromium	0.058		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 09:36	1
Lead	0.0031	J	0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 09:36	1
Selenium	0.018	J	0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 09:36	1
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 09:36	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Fahrenheit			02/10/23 13:30	1
Total Suspended Solids (SM 2540D-2015)	18000		400	100	mg/L			02/10/23 09:07	1
Total Organic Carbon (SM 5310 C-2014)	7000		200	70	mg/L			02/10/23 16:46	200
corrosivity by pH (SW846 9040C)	8.8	HF	0.1	0.1	SU			02/10/23 09:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-02/2023-02-09/

Lab Sample ID: 240-180173-2

Date Collected: 02/09/23 16:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 16:45	2
1,1,1,2-Tetrachloroethane	ND		2.0	1.2	ug/L			02/10/23 16:45	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.82	ug/L			02/10/23 16:45	2
1,1,2-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 16:45	2
1,1-Dichloroethane	ND		2.0	0.94	ug/L			02/10/23 16:45	2
1,1-Dichloroethene	ND		2.0	0.98	ug/L			02/10/23 16:45	2
1,2,4-Trichlorobenzene	ND		2.0	1.5	ug/L			02/10/23 16:45	2
1,2-Dibromo-3-Chloropropane	ND		4.0	1.8	ug/L			02/10/23 16:45	2
Ethylene Dibromide	ND		2.0	0.82	ug/L			02/10/23 16:45	2
1,2-Dichlorobenzene	ND		2.0	0.96	ug/L			02/10/23 16:45	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			02/10/23 16:45	2
1,2-Dichloropropane	ND		2.0	0.94	ug/L			02/10/23 16:45	2
1,3-Dichlorobenzene	ND		2.0	0.90	ug/L			02/10/23 16:45	2
1,4-Dichlorobenzene	ND		2.0	0.82	ug/L			02/10/23 16:45	2
2-Butanone (MEK)	8.4	J	20	2.3	ug/L			02/10/23 16:45	2
2-Hexanone	ND		20	2.2	ug/L			02/10/23 16:45	2
4-Methyl-2-pentanone (MIBK)	5.5	J	20	2.0	ug/L			02/10/23 16:45	2
Acetone	20		20	11	ug/L			02/10/23 16:45	2
Benzene	1.4	J	2.0	0.84	ug/L			02/10/23 16:45	2
Dichlorobromomethane	ND		2.0	0.34	ug/L			02/10/23 16:45	2
Bromoform	ND		2.0	1.5	ug/L			02/10/23 16:45	2
Bromomethane	ND		2.0	0.84	ug/L			02/10/23 16:45	2
Carbon disulfide	ND		2.0	1.2	ug/L			02/10/23 16:45	2
Carbon tetrachloride	ND		2.0	0.52	ug/L			02/10/23 16:45	2
Chlorobenzene	ND		2.0	0.76	ug/L			02/10/23 16:45	2
Chloroethane	ND		2.0	1.7	ug/L			02/10/23 16:45	2
Chloroform	ND		2.0	0.94	ug/L			02/10/23 16:45	2
Chloromethane	ND		2.0	1.3	ug/L			02/10/23 16:45	2
cis-1,2-Dichloroethene	ND		2.0	0.92	ug/L			02/10/23 16:45	2
cis-1,3-Dichloropropene	ND		2.0	1.2	ug/L			02/10/23 16:45	2
Cyclohexane	ND		2.0	0.96	ug/L			02/10/23 16:45	2
Chlorodibromomethane	ND		2.0	0.78	ug/L			02/10/23 16:45	2
Dichlorodifluoromethane	ND		2.0	0.70	ug/L			02/10/23 16:45	2
Ethylbenzene	8.2		2.0	0.84	ug/L			02/10/23 16:45	2
Isopropylbenzene	2.4		2.0	0.98	ug/L			02/10/23 16:45	2
Methyl acetate	ND		20	3.4	ug/L			02/10/23 16:45	2
Methyl tert-butyl ether	ND		2.0	0.94	ug/L			02/10/23 16:45	2
Methylcyclohexane	2.0		2.0	0.66	ug/L			02/10/23 16:45	2
Methylene Chloride	ND		10	5.2	ug/L			02/10/23 16:45	2
Styrene	ND		2.0	0.90	ug/L			02/10/23 16:45	2
Tetrachloroethene	ND		2.0	0.88	ug/L			02/10/23 16:45	2
Toluene	20		2.0	0.88	ug/L			02/10/23 16:45	2
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/L			02/10/23 16:45	2
trans-1,3-Dichloropropene	ND		2.0	1.3	ug/L			02/10/23 16:45	2
Trichloroethene	ND		2.0	0.88	ug/L			02/10/23 16:45	2
Trichlorofluoromethane	ND		2.0	0.90	ug/L			02/10/23 16:45	2
Vinyl chloride	35		2.0	0.90	ug/L			02/10/23 16:45	2
Xylenes, Total	45		4.0	0.84	ug/L			02/10/23 16:45	2

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-02/2023-02-09/

Lab Sample ID: 240-180173-2

Date Collected: 02/09/23 16:30

Matrix: Water

Date Received: 02/10/23 07:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		78 - 122		02/10/23 15:34	1000
Toluene-d8 (Surr)	117		78 - 122		02/10/23 16:45	2
Toluene-d8 (Surr)	95		78 - 122		02/10/23 18:43	5000
Dibromofluoromethane (Surr)	102		73 - 120		02/10/23 15:34	1000
Dibromofluoromethane (Surr)	99		73 - 120		02/10/23 16:45	2
Dibromofluoromethane (Surr)	102		73 - 120		02/10/23 18:43	5000
4-Bromofluorobenzene (Surr)	88		56 - 136		02/10/23 15:34	1000
4-Bromofluorobenzene (Surr)	113		56 - 136		02/10/23 16:45	2
4-Bromofluorobenzene (Surr)	86		56 - 136		02/10/23 18:43	5000
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		02/10/23 15:34	1000
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		02/10/23 16:45	2
1,2-Dichloroethane-d4 (Surr)	92		62 - 137		02/10/23 18:43	5000

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		89	44	ug/L		02/10/23 08:46	02/11/23 08:39	100
bis (2-chloroisopropyl) ether	ND		89	49	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4,5-Trichlorophenol	ND		450	180	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4,6-Trichlorophenol	ND		450	160	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4-Dichlorophenol	ND		180	23	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4-Dimethylphenol	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4-Dinitrophenol	ND		890	550	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,4-Dinitrotoluene	ND		450	180	ug/L		02/10/23 08:46	02/11/23 08:39	100
2,6-Dinitrotoluene	ND		450	190	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Chloronaphthalene	ND		89	43	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Chlorophenol	ND		89	24	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Methylnaphthalene	ND		18	9.9	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Methylphenol	ND		89	19	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Nitroaniline	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:39	100
2-Nitrophenol	ND		180	50	ug/L		02/10/23 08:46	02/11/23 08:39	100
3,3'-Dichlorobenzidine	ND		450	100	ug/L		02/10/23 08:46	02/11/23 08:39	100
3-Nitroaniline	ND		180	51	ug/L		02/10/23 08:46	02/11/23 08:39	100
4,6-Dinitro-2-methylphenol	ND		450	250	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Bromophenyl phenyl ether	ND		180	45	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Chloro-3-methylphenol	ND		180	26	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Chloroaniline	ND		180	28	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Chlorophenyl phenyl ether	ND		180	49	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Nitroaniline	ND	+	180	82	ug/L		02/10/23 08:46	02/11/23 08:39	100
4-Nitrophenol	ND		890	190	ug/L		02/10/23 08:46	02/11/23 08:39	100
Acenaphthene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:39	100
Acenaphthylene	ND		18	11	ug/L		02/10/23 08:46	02/11/23 08:39	100
Acetophenone	ND		89	33	ug/L		02/10/23 08:46	02/11/23 08:39	100
Anthracene	ND		18	12	ug/L		02/10/23 08:46	02/11/23 08:39	100
Atrazine	ND		180	85	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzaldehyde	ND	+	180	68	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzo[a]anthracene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzo[a]pyrene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzo[b]fluoranthene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzo[g,h,i]perylene	ND		18	16	ug/L		02/10/23 08:46	02/11/23 08:39	100
Benzo[k]fluoranthene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 08:39	100

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-02/2023-02-09/

Lab Sample ID: 240-180173-2

Date Collected: 02/09/23 16:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		89	41	ug/L		02/10/23 08:46	02/11/23 08:39	100
Bis(2-chloroethyl)ether	ND		89	36	ug/L		02/10/23 08:46	02/11/23 08:39	100
Bis(2-ethylhexyl) phthalate	ND		450	200	ug/L		02/10/23 08:46	02/11/23 08:39	100
Butyl benzyl phthalate	ND		180	59	ug/L		02/10/23 08:46	02/11/23 08:39	100
Caprolactam	ND		450	83	ug/L		02/10/23 08:46	02/11/23 08:39	100
Carbazole	ND		89	44	ug/L		02/10/23 08:46	02/11/23 08:39	100
Chrysene	ND		18	17	ug/L		02/10/23 08:46	02/11/23 08:39	100
Dibenz(a,h)anthracene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 08:39	100
Dibenzofuran	ND		89	50	ug/L		02/10/23 08:46	02/11/23 08:39	100
Diethyl phthalate	ND		450	340	ug/L		02/10/23 08:46	02/11/23 08:39	100
Dimethyl phthalate	ND		180	46	ug/L		02/10/23 08:46	02/11/23 08:39	100
Di-n-butyl phthalate	ND		450	160	ug/L		02/10/23 08:46	02/11/23 08:39	100
Di-n-octyl phthalate	ND		180	73	ug/L		02/10/23 08:46	02/11/23 08:39	100
Fluoranthene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 08:39	100
Fluorene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:39	100
Hexachlorobenzene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 08:39	100
Hexachlorobutadiene	ND		89	48	ug/L		02/10/23 08:46	02/11/23 08:39	100
Hexachlorocyclopentadiene	ND		890	160	ug/L		02/10/23 08:46	02/11/23 08:39	100
Hexachloroethane	ND		89	35	ug/L		02/10/23 08:46	02/11/23 08:39	100
Indeno[1,2,3-cd]pyrene	ND		18	12	ug/L		02/10/23 08:46	02/11/23 08:39	100
Isophorone	ND		89	29	ug/L		02/10/23 08:46	02/11/23 08:39	100
N-Nitrosodi-n-propylamine	ND		89	23	ug/L		02/10/23 08:46	02/11/23 08:39	100
N-Nitrosodiphenylamine	ND		89	39	ug/L		02/10/23 08:46	02/11/23 08:39	100
Naphthalene	ND		18	9.7	ug/L		02/10/23 08:46	02/11/23 08:39	100
Nitrobenzene	ND		89	46	ug/L		02/10/23 08:46	02/11/23 08:39	100
Pentachlorophenol	ND		890	280	ug/L		02/10/23 08:46	02/11/23 08:39	100
Phenanthrene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 08:39	100
Phenol	ND		89	11	ug/L		02/10/23 08:46	02/11/23 08:39	100
Pyrene	ND		18	16	ug/L		02/10/23 08:46	02/11/23 08:39	100
3 & 4 Methylphenol	ND		180	17	ug/L		02/10/23 08:46	02/11/23 08:39	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/10/23 08:46	02/11/23 08:39	100
Phenol-d5 (Surr)	0	S1-	26 - 120	02/10/23 08:46	02/11/23 08:39	100
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/10/23 08:46	02/11/23 08:39	100
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/10/23 08:46	02/11/23 08:39	100
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/10/23 08:46	02/11/23 08:39	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/10/23 08:46	02/11/23 08:39	100

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	160000	B	25000	3300	ug/L		02/10/23 08:41	02/10/23 11:55	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	113		52 - 121	02/10/23 08:41	02/10/23 11:55	50

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 09:40	1
Barium	0.078	J B	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 09:40	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-02/2023-02-09/

Lab Sample ID: 240-180173-2

Date Collected: 02/09/23 16:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00021	J	0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 09:40	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 09:40	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 09:40	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 09:40	1
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 09:40	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/10/23 14:28	1
Total Suspended Solids (SM 2540D-2015)	200		6.7	1.7	mg/L			02/10/23 09:07	1
Total Organic Carbon (SM 5310 C-2014)	410		20	7.0	mg/L			02/10/23 16:59	20
corrosivity by pH (SW846 9040C)	8.2	HF	0.1	0.1	SU			02/10/23 10:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Date Collected: 02/09/23 18:20

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	2.4	ug/L			02/10/23 15:29	5
1,1,2,2-Tetrachloroethane	ND		5.0	3.0	ug/L			02/10/23 15:29	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	2.1	ug/L			02/10/23 15:29	5
1,1,2-Trichloroethane	ND		5.0	2.4	ug/L			02/10/23 15:29	5
1,1-Dichloroethane	ND		5.0	2.4	ug/L			02/10/23 15:29	5
1,1-Dichloroethene	ND		5.0	2.5	ug/L			02/10/23 15:29	5
1,2,4-Trichlorobenzene	ND		5.0	3.9	ug/L			02/10/23 15:29	5
1,2-Dibromo-3-Chloropropane	ND		10	4.6	ug/L			02/10/23 15:29	5
Ethylene Dibromide	ND		5.0	2.1	ug/L			02/10/23 15:29	5
1,2-Dichlorobenzene	ND		5.0	2.4	ug/L			02/10/23 15:29	5
1,2-Dichloroethane	ND		5.0	1.1	ug/L			02/10/23 15:29	5
1,2-Dichloropropane	ND		5.0	2.4	ug/L			02/10/23 15:29	5
1,3-Dichlorobenzene	ND		5.0	2.3	ug/L			02/10/23 15:29	5
1,4-Dichlorobenzene	ND		5.0	2.1	ug/L			02/10/23 15:29	5
2-Butanone (MEK)	ND		50	5.8	ug/L			02/10/23 15:29	5
2-Hexanone	ND		50	5.6	ug/L			02/10/23 15:29	5
4-Methyl-2-pentanone (MIBK)	ND		50	5.0	ug/L			02/10/23 15:29	5
Acetone	ND		50	27	ug/L			02/10/23 15:29	5
Benzene	4.4	J	5.0	2.1	ug/L			02/10/23 15:29	5
Dichlorobromomethane	ND		5.0	0.85	ug/L			02/10/23 15:29	5
Bromoform	ND		5.0	3.8	ug/L			02/10/23 15:29	5
Bromomethane	ND		5.0	2.1	ug/L			02/10/23 15:29	5
Carbon disulfide	ND		5.0	3.0	ug/L			02/10/23 15:29	5
Carbon tetrachloride	ND		5.0	1.3	ug/L			02/10/23 15:29	5
Chlorobenzene	ND		5.0	1.9	ug/L			02/10/23 15:29	5
Chloroethane	ND		5.0	4.2	ug/L			02/10/23 15:29	5
Chloroform	ND		5.0	2.4	ug/L			02/10/23 15:29	5
Chloromethane	ND		5.0	3.2	ug/L			02/10/23 15:29	5
cis-1,2-Dichloroethene	ND		5.0	2.3	ug/L			02/10/23 15:29	5
cis-1,3-Dichloropropene	ND		5.0	3.1	ug/L			02/10/23 15:29	5
Cyclohexane	ND		5.0	2.4	ug/L			02/10/23 15:29	5
Chlorodibromomethane	ND		5.0	2.0	ug/L			02/10/23 15:29	5
Dichlorodifluoromethane	ND		5.0	1.8	ug/L			02/10/23 15:29	5
Ethylbenzene	3.3	J	5.0	2.1	ug/L			02/10/23 15:29	5
Isopropylbenzene	ND		5.0	2.5	ug/L			02/10/23 15:29	5
Methyl acetate	ND		50	8.6	ug/L			02/10/23 15:29	5
Methyl tert-butyl ether	ND		5.0	2.4	ug/L			02/10/23 15:29	5
Methylcyclohexane	ND		5.0	1.7	ug/L			02/10/23 15:29	5
Methylene Chloride	ND		25	13	ug/L			02/10/23 15:29	5
Styrene	4.4	J	5.0	2.3	ug/L			02/10/23 15:29	5
Tetrachloroethene	ND		5.0	2.2	ug/L			02/10/23 15:29	5
Toluene	6.6		5.0	2.2	ug/L			02/10/23 15:29	5
trans-1,2-Dichloroethene	ND		5.0	2.6	ug/L			02/10/23 15:29	5
trans-1,3-Dichloropropene	ND		5.0	3.4	ug/L			02/10/23 15:29	5
Trichloroethene	ND		5.0	2.2	ug/L			02/10/23 15:29	5
Trichlorofluoromethane	ND		5.0	2.3	ug/L			02/10/23 15:29	5
Vinyl chloride	910		5.0	2.3	ug/L			02/10/23 15:29	5
Xylenes, Total	32		10	2.1	ug/L			02/10/23 15:29	5

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Date Collected: 02/09/23 18:20

Matrix: Water

Date Received: 02/10/23 07:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		78 - 122		02/10/23 15:10	25
Toluene-d8 (Surr)	110		78 - 122		02/10/23 15:29	5
Dibromofluoromethane (Surr)	105		73 - 120		02/10/23 15:10	25
Dibromofluoromethane (Surr)	104		73 - 120		02/10/23 15:29	5
4-Bromofluorobenzene (Surr)	97		56 - 136		02/10/23 15:10	25
4-Bromofluorobenzene (Surr)	124		56 - 136		02/10/23 15:29	5
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		02/10/23 15:10	25
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		02/10/23 15:29	5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		45	22	ug/L		02/10/23 08:46	02/11/23 07:52	50
bis (2-chloroisopropyl) ether	ND		45	25	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4,5-Trichlorophenol	ND		220	89	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4,6-Trichlorophenol	ND		220	80	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4-Dichlorophenol	ND		89	12	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4-Dimethylphenol	ND		89	23	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4-Dinitrophenol	ND		450	280	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,4-Dinitrotoluene	ND		220	92	ug/L		02/10/23 08:46	02/11/23 07:52	50
2,6-Dinitrotoluene	ND		220	95	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Chloronaphthalene	ND		45	22	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Chlorophenol	ND		45	12	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Methylnaphthalene	24		8.9	5.0	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Methylphenol	ND		45	9.3	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Nitroaniline	ND		89	23	ug/L		02/10/23 08:46	02/11/23 07:52	50
2-Nitrophenol	ND		89	25	ug/L		02/10/23 08:46	02/11/23 07:52	50
3,3'-Dichlorobenzidine	ND		220	51	ug/L		02/10/23 08:46	02/11/23 07:52	50
3-Nitroaniline	ND		89	25	ug/L		02/10/23 08:46	02/11/23 07:52	50
4,6-Dinitro-2-methylphenol	ND		220	130	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Bromophenyl phenyl ether	ND		89	22	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Chloro-3-methylphenol	ND		89	13	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Chloroaniline	ND		89	14	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Chlorophenyl phenyl ether	ND		89	25	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Nitroaniline	ND	+	89	41	ug/L		02/10/23 08:46	02/11/23 07:52	50
4-Nitrophenol	ND		450	97	ug/L		02/10/23 08:46	02/11/23 07:52	50
Acenaphthene	ND		8.9	7.7	ug/L		02/10/23 08:46	02/11/23 07:52	50
Acenaphthylene	ND		8.9	5.6	ug/L		02/10/23 08:46	02/11/23 07:52	50
Acetophenone	ND		45	16	ug/L		02/10/23 08:46	02/11/23 07:52	50
Anthracene	ND		8.9	6.0	ug/L		02/10/23 08:46	02/11/23 07:52	50
Atrazine	ND		89	43	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzaldehyde	ND	+	89	34	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzo[a]anthracene	ND		8.9	7.6	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzo[a]pyrene	ND		8.9	7.7	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzo[b]fluoranthene	ND		8.9	6.9	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzo[g,h,i]perylene	ND		8.9	7.9	ug/L		02/10/23 08:46	02/11/23 07:52	50
Benzo[k]fluoranthene	ND		8.9	6.3	ug/L		02/10/23 08:46	02/11/23 07:52	50
Bis(2-chloroethoxy)methane	ND		45	20	ug/L		02/10/23 08:46	02/11/23 07:52	50
Bis(2-chloroethyl)ether	ND		45	18	ug/L		02/10/23 08:46	02/11/23 07:52	50
Bis(2-ethylhexyl) phthalate	ND		220	99	ug/L		02/10/23 08:46	02/11/23 07:52	50
Butyl benzyl phthalate	ND		89	30	ug/L		02/10/23 08:46	02/11/23 07:52	50

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Date Collected: 02/09/23 18:20

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		220	42	ug/L		02/10/23 08:46	02/11/23 07:52	50
Carbazole	ND		45	22	ug/L		02/10/23 08:46	02/11/23 07:52	50
Chrysene	ND		8.9	8.3	ug/L		02/10/23 08:46	02/11/23 07:52	50
Dibenz(a,h)anthracene	ND		8.9	6.7	ug/L		02/10/23 08:46	02/11/23 07:52	50
Dibenzofuran	ND		45	25	ug/L		02/10/23 08:46	02/11/23 07:52	50
Diethyl phthalate	ND		220	170	ug/L		02/10/23 08:46	02/11/23 07:52	50
Dimethyl phthalate	ND		89	23	ug/L		02/10/23 08:46	02/11/23 07:52	50
Di-n-butyl phthalate	ND		220	80	ug/L		02/10/23 08:46	02/11/23 07:52	50
Di-n-octyl phthalate	ND		89	37	ug/L		02/10/23 08:46	02/11/23 07:52	50
Fluoranthene	ND		8.9	7.1	ug/L		02/10/23 08:46	02/11/23 07:52	50
Fluorene	ND		8.9	7.5	ug/L		02/10/23 08:46	02/11/23 07:52	50
Hexachlorobenzene	ND		8.9	7.2	ug/L		02/10/23 08:46	02/11/23 07:52	50
Hexachlorobutadiene	ND		45	24	ug/L		02/10/23 08:46	02/11/23 07:52	50
Hexachlorocyclopentadiene	ND		450	78	ug/L		02/10/23 08:46	02/11/23 07:52	50
Hexachloroethane	ND		45	18	ug/L		02/10/23 08:46	02/11/23 07:52	50
Indeno[1,2,3-cd]pyrene	ND		8.9	6.0	ug/L		02/10/23 08:46	02/11/23 07:52	50
Isophorone	ND		45	14	ug/L		02/10/23 08:46	02/11/23 07:52	50
N-Nitrosodi-n-propylamine	ND		45	11	ug/L		02/10/23 08:46	02/11/23 07:52	50
N-Nitrosodiphenylamine	ND		45	20	ug/L		02/10/23 08:46	02/11/23 07:52	50
Naphthalene	14		8.9	4.9	ug/L		02/10/23 08:46	02/11/23 07:52	50
Nitrobenzene	ND		45	23	ug/L		02/10/23 08:46	02/11/23 07:52	50
Pentachlorophenol	ND		450	140	ug/L		02/10/23 08:46	02/11/23 07:52	50
Phenanthrene	ND		8.9	7.5	ug/L		02/10/23 08:46	02/11/23 07:52	50
Phenol	ND		45	5.7	ug/L		02/10/23 08:46	02/11/23 07:52	50
Pyrene	ND		8.9	7.8	ug/L		02/10/23 08:46	02/11/23 07:52	50
3 & 4 Methylphenol	ND		89	8.5	ug/L		02/10/23 08:46	02/11/23 07:52	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/10/23 08:46	02/11/23 07:52	50
Phenol-d5 (Surr)	0	S1-	26 - 120	02/10/23 08:46	02/11/23 07:52	50
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/10/23 08:46	02/11/23 07:52	50
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/10/23 08:46	02/11/23 07:52	50
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/10/23 08:46	02/11/23 07:52	50
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/10/23 08:46	02/11/23 07:52	50

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	28000	B	2400	330	ug/L		02/10/23 08:41	02/10/23 12:22	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	119		52 - 121	02/10/23 08:41	02/10/23 12:22	5

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 09:44	1
Barium	0.025	J B	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 09:44	1
Cadmium	ND		0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 09:44	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 09:44	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 09:44	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 09:44	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Date Collected: 02/09/23 18:20

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 09:44	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/10/23 15:10	1
Total Suspended Solids (SM 2540D-2015)	89		8.0	2.0	mg/L			02/10/23 09:07	1
Total Organic Carbon (SM 5310 C-2014)	900		50	17	mg/L			02/10/23 17:11	50
corrosivity by pH (SW846 9040C)	7.8	HF	0.1	0.1	SU			02/10/23 10:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Date Collected: 02/09/23 18:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 18:01	2
1,1,2,2-Tetrachloroethane	ND		2.0	1.2	ug/L			02/10/23 18:01	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.82	ug/L			02/10/23 18:01	2
1,1,2-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 18:01	2
1,1-Dichloroethane	ND		2.0	0.94	ug/L			02/10/23 18:01	2
1,1-Dichloroethene	ND		2.0	0.98	ug/L			02/10/23 18:01	2
1,2,4-Trichlorobenzene	ND		2.0	1.5	ug/L			02/10/23 18:01	2
1,2-Dibromo-3-Chloropropane	ND		4.0	1.8	ug/L			02/10/23 18:01	2
Ethylene Dibromide	ND		2.0	0.82	ug/L			02/10/23 18:01	2
1,2-Dichlorobenzene	ND		2.0	0.96	ug/L			02/10/23 18:01	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			02/10/23 18:01	2
1,2-Dichloropropane	ND		2.0	0.94	ug/L			02/10/23 18:01	2
1,3-Dichlorobenzene	ND		2.0	0.90	ug/L			02/10/23 18:01	2
1,4-Dichlorobenzene	ND		2.0	0.82	ug/L			02/10/23 18:01	2
2-Butanone (MEK)	10	J	20	2.3	ug/L			02/10/23 18:01	2
2-Hexanone	ND		20	2.2	ug/L			02/10/23 18:01	2
4-Methyl-2-pentanone (MIBK)	7.2	J	20	2.0	ug/L			02/10/23 18:01	2
Acetone	15	J	20	11	ug/L			02/10/23 18:01	2
Benzene	1.8	J	2.0	0.84	ug/L			02/10/23 18:01	2
Dichlorobromomethane	ND		2.0	0.34	ug/L			02/10/23 18:01	2
Bromoform	ND		2.0	1.5	ug/L			02/10/23 18:01	2
Bromomethane	ND		2.0	0.84	ug/L			02/10/23 18:01	2
Carbon disulfide	ND		2.0	1.2	ug/L			02/10/23 18:01	2
Carbon tetrachloride	ND		2.0	0.52	ug/L			02/10/23 18:01	2
Chlorobenzene	ND		2.0	0.76	ug/L			02/10/23 18:01	2
Chloroethane	ND		2.0	1.7	ug/L			02/10/23 18:01	2
Chloroform	ND		2.0	0.94	ug/L			02/10/23 18:01	2
Chloromethane	ND		2.0	1.3	ug/L			02/10/23 18:01	2
cis-1,2-Dichloroethene	ND		2.0	0.92	ug/L			02/10/23 18:01	2
cis-1,3-Dichloropropene	ND		2.0	1.2	ug/L			02/10/23 18:01	2
Cyclohexane	ND		2.0	0.96	ug/L			02/10/23 18:01	2
Chlorodibromomethane	ND		2.0	0.78	ug/L			02/10/23 18:01	2
Dichlorodifluoromethane	ND		2.0	0.70	ug/L			02/10/23 18:01	2
Ethylbenzene	ND		2.0	0.84	ug/L			02/10/23 18:01	2
Isopropylbenzene	ND		2.0	0.98	ug/L			02/10/23 18:01	2
Methyl acetate	ND		20	3.4	ug/L			02/10/23 18:01	2
Methyl tert-butyl ether	ND		2.0	0.94	ug/L			02/10/23 18:01	2
Methylcyclohexane	ND		2.0	0.66	ug/L			02/10/23 18:01	2
Methylene Chloride	ND		10	5.2	ug/L			02/10/23 18:01	2
Styrene	ND		2.0	0.90	ug/L			02/10/23 18:01	2
Tetrachloroethene	ND		2.0	0.88	ug/L			02/10/23 18:01	2
Toluene	ND		2.0	0.88	ug/L			02/10/23 18:01	2
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/L			02/10/23 18:01	2
trans-1,3-Dichloropropene	ND		2.0	1.3	ug/L			02/10/23 18:01	2
Trichloroethene	ND		2.0	0.88	ug/L			02/10/23 18:01	2
Trichlorofluoromethane	ND		2.0	0.90	ug/L			02/10/23 18:01	2
Vinyl chloride	290		2.0	0.90	ug/L			02/10/23 18:01	2
Xylenes, Total	3.0	J	4.0	0.84	ug/L			02/10/23 18:01	2

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Date Collected: 02/09/23 18:30

Matrix: Water

Date Received: 02/10/23 07:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	116		78 - 122		02/10/23 18:01	2
Toluene-d8 (Surr)	90		78 - 122		02/10/23 19:54	1000
Dibromofluoromethane (Surr)	101		73 - 120		02/10/23 18:01	2
Dibromofluoromethane (Surr)	101		73 - 120		02/10/23 19:54	1000
4-Bromofluorobenzene (Surr)	113		56 - 136		02/10/23 18:01	2
4-Bromofluorobenzene (Surr)	84		56 - 136		02/10/23 19:54	1000
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		02/10/23 18:01	2
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		02/10/23 19:54	1000

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		89	44	ug/L		02/10/23 08:46	02/11/23 09:02	100
bis (2-chloroisopropyl) ether	ND		89	49	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4,5-Trichlorophenol	ND		450	180	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4,6-Trichlorophenol	ND		450	160	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4-Dichlorophenol	ND		180	23	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4-Dimethylphenol	ND		180	46	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4-Dinitrophenol	ND		890	550	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,4-Dinitrotoluene	ND		450	180	ug/L		02/10/23 08:46	02/11/23 09:02	100
2,6-Dinitrotoluene	ND		450	190	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Chloronaphthalene	ND		89	43	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Chlorophenol	ND		89	24	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Methylnaphthalene	ND		18	9.9	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Methylphenol	ND		89	19	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Nitroaniline	ND		180	46	ug/L		02/10/23 08:46	02/11/23 09:02	100
2-Nitrophenol	ND		180	50	ug/L		02/10/23 08:46	02/11/23 09:02	100
3,3'-Dichlorobenzidine	ND		450	100	ug/L		02/10/23 08:46	02/11/23 09:02	100
3-Nitroaniline	ND		180	51	ug/L		02/10/23 08:46	02/11/23 09:02	100
4,6-Dinitro-2-methylphenol	ND		450	250	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Bromophenyl phenyl ether	ND		180	45	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Chloro-3-methylphenol	ND		180	26	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Chloroaniline	ND		180	28	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Chlorophenyl phenyl ether	ND		180	49	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Nitroaniline	ND	+	180	82	ug/L		02/10/23 08:46	02/11/23 09:02	100
4-Nitrophenol	ND		890	190	ug/L		02/10/23 08:46	02/11/23 09:02	100
Acenaphthene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 09:02	100
Acenaphthylene	ND		18	11	ug/L		02/10/23 08:46	02/11/23 09:02	100
Acetophenone	ND		89	33	ug/L		02/10/23 08:46	02/11/23 09:02	100
Anthracene	ND		18	12	ug/L		02/10/23 08:46	02/11/23 09:02	100
Atrazine	ND		180	85	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzaldehyde	ND	+	180	68	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzo[a]anthracene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzo[a]pyrene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzo[b]fluoranthene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzo[g,h,i]perylene	ND		18	16	ug/L		02/10/23 08:46	02/11/23 09:02	100
Benzo[k]fluoranthene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 09:02	100
Bis(2-chloroethoxy)methane	ND		89	41	ug/L		02/10/23 08:46	02/11/23 09:02	100
Bis(2-chloroethyl)ether	ND		89	36	ug/L		02/10/23 08:46	02/11/23 09:02	100
Bis(2-ethylhexyl) phthalate	ND		450	200	ug/L		02/10/23 08:46	02/11/23 09:02	100
Butyl benzyl phthalate	ND		180	59	ug/L		02/10/23 08:46	02/11/23 09:02	100

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Date Collected: 02/09/23 18:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		450	83	ug/L		02/10/23 08:46	02/11/23 09:02	100
Carbazole	ND		89	44	ug/L		02/10/23 08:46	02/11/23 09:02	100
Chrysene	ND		18	17	ug/L		02/10/23 08:46	02/11/23 09:02	100
Dibenz(a,h)anthracene	ND		18	13	ug/L		02/10/23 08:46	02/11/23 09:02	100
Dibenzofuran	ND		89	50	ug/L		02/10/23 08:46	02/11/23 09:02	100
Diethyl phthalate	ND		450	340	ug/L		02/10/23 08:46	02/11/23 09:02	100
Dimethyl phthalate	ND		180	46	ug/L		02/10/23 08:46	02/11/23 09:02	100
Di-n-butyl phthalate	ND		450	160	ug/L		02/10/23 08:46	02/11/23 09:02	100
Di-n-octyl phthalate	ND		180	73	ug/L		02/10/23 08:46	02/11/23 09:02	100
Fluoranthene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 09:02	100
Fluorene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 09:02	100
Hexachlorobenzene	ND		18	14	ug/L		02/10/23 08:46	02/11/23 09:02	100
Hexachlorobutadiene	ND		89	48	ug/L		02/10/23 08:46	02/11/23 09:02	100
Hexachlorocyclopentadiene	ND		890	160	ug/L		02/10/23 08:46	02/11/23 09:02	100
Hexachloroethane	ND		89	35	ug/L		02/10/23 08:46	02/11/23 09:02	100
Indeno[1,2,3-cd]pyrene	ND		18	12	ug/L		02/10/23 08:46	02/11/23 09:02	100
Isophorone	ND		89	29	ug/L		02/10/23 08:46	02/11/23 09:02	100
N-Nitrosodi-n-propylamine	ND		89	23	ug/L		02/10/23 08:46	02/11/23 09:02	100
N-Nitrosodiphenylamine	ND		89	39	ug/L		02/10/23 08:46	02/11/23 09:02	100
Naphthalene	ND		18	9.7	ug/L		02/10/23 08:46	02/11/23 09:02	100
Nitrobenzene	ND		89	46	ug/L		02/10/23 08:46	02/11/23 09:02	100
Pentachlorophenol	ND		890	280	ug/L		02/10/23 08:46	02/11/23 09:02	100
Phenanthrene	ND		18	15	ug/L		02/10/23 08:46	02/11/23 09:02	100
Phenol	ND		89	11	ug/L		02/10/23 08:46	02/11/23 09:02	100
Pyrene	ND		18	16	ug/L		02/10/23 08:46	02/11/23 09:02	100
3 & 4 Methylphenol	ND		180	17	ug/L		02/10/23 08:46	02/11/23 09:02	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/10/23 08:46	02/11/23 09:02	100
Phenol-d5 (Surr)	0	S1-	26 - 120	02/10/23 08:46	02/11/23 09:02	100
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/10/23 08:46	02/11/23 09:02	100
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/10/23 08:46	02/11/23 09:02	100
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/10/23 08:46	02/11/23 09:02	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/10/23 08:46	02/11/23 09:02	100

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	2300000	B	350000	47000	ug/L		02/10/23 08:41	02/10/23 11:55	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	200	S1+	52 - 121	02/10/23 08:41	02/10/23 11:55	500

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 09:48	1
Barium	0.036	J B	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 09:48	1
Cadmium	0.00027	J	0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 09:48	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 09:48	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 09:48	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 09:48	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Date Collected: 02/09/23 18:30

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 09:48	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/10/23 15:47	1
Total Suspended Solids (SM 2540D-2015)	11000		80	20	mg/L			02/10/23 09:07	1
Total Organic Carbon (SM 5310 C-2014)	540		20	7.0	mg/L			02/10/23 17:24	20
corrosivity by pH (SW846 9040C)	7.5	HF	0.1	0.1	SU			02/10/23 10:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Date Collected: 02/09/23 18:40

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 19:17	2
1,1,1,2-Tetrachloroethane	ND		2.0	1.2	ug/L			02/10/23 19:17	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.82	ug/L			02/10/23 19:17	2
1,1,2-Trichloroethane	ND		2.0	0.96	ug/L			02/10/23 19:17	2
1,1-Dichloroethane	ND		2.0	0.94	ug/L			02/10/23 19:17	2
1,1-Dichloroethene	ND		2.0	0.98	ug/L			02/10/23 19:17	2
1,2,4-Trichlorobenzene	ND		2.0	1.5	ug/L			02/10/23 19:17	2
1,2-Dibromo-3-Chloropropane	ND		4.0	1.8	ug/L			02/10/23 19:17	2
Ethylene Dibromide	ND		2.0	0.82	ug/L			02/10/23 19:17	2
1,2-Dichlorobenzene	ND	F1 F2	2.0	0.96	ug/L			02/10/23 19:17	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			02/10/23 19:17	2
1,2-Dichloropropane	ND		2.0	0.94	ug/L			02/10/23 19:17	2
1,3-Dichlorobenzene	ND	F1 F2	2.0	0.90	ug/L			02/10/23 19:17	2
1,4-Dichlorobenzene	ND	F1	2.0	0.82	ug/L			02/10/23 19:17	2
2-Butanone (MEK)	4.6	J	20	2.3	ug/L			02/10/23 19:17	2
2-Hexanone	ND		20	2.2	ug/L			02/10/23 19:17	2
4-Methyl-2-pentanone (MIBK)	3.6	J	20	2.0	ug/L			02/10/23 19:17	2
Acetone	ND		20	11	ug/L			02/10/23 19:17	2
Benzene	1.5	J	2.0	0.84	ug/L			02/10/23 19:17	2
Dichlorobromomethane	ND		2.0	0.34	ug/L			02/10/23 19:17	2
Bromoform	ND		2.0	1.5	ug/L			02/10/23 19:17	2
Bromomethane	ND		2.0	0.84	ug/L			02/10/23 19:17	2
Carbon disulfide	ND		2.0	1.2	ug/L			02/10/23 19:17	2
Carbon tetrachloride	ND		2.0	0.52	ug/L			02/10/23 19:17	2
Chlorobenzene	ND	F1 F2	2.0	0.76	ug/L			02/10/23 19:17	2
Chloroethane	ND		2.0	1.7	ug/L			02/10/23 19:17	2
Chloroform	ND		2.0	0.94	ug/L			02/10/23 19:17	2
Chloromethane	ND		2.0	1.3	ug/L			02/10/23 19:17	2
cis-1,2-Dichloroethene	ND		2.0	0.92	ug/L			02/10/23 19:17	2
cis-1,3-Dichloropropene	ND		2.0	1.2	ug/L			02/10/23 19:17	2
Cyclohexane	ND		2.0	0.96	ug/L			02/10/23 19:17	2
Chlorodibromomethane	ND		2.0	0.78	ug/L			02/10/23 19:17	2
Dichlorodifluoromethane	ND		2.0	0.70	ug/L			02/10/23 19:17	2
Ethylbenzene	ND	F1 F2	2.0	0.84	ug/L			02/10/23 19:17	2
Isopropylbenzene	ND	F1 F2	2.0	0.98	ug/L			02/10/23 19:17	2
Methyl acetate	ND		20	3.4	ug/L			02/10/23 19:17	2
Methyl tert-butyl ether	ND		2.0	0.94	ug/L			02/10/23 19:17	2
Methylcyclohexane	ND		2.0	0.66	ug/L			02/10/23 19:17	2
Methylene Chloride	ND		10	5.2	ug/L			02/10/23 19:17	2
Styrene	ND	F1 F2	2.0	0.90	ug/L			02/10/23 19:17	2
Tetrachloroethene	ND	F2	2.0	0.88	ug/L			02/10/23 19:17	2
Toluene	1.1	J F2	2.0	0.88	ug/L			02/10/23 19:17	2
trans-1,2-Dichloroethene	ND	F2	2.0	1.0	ug/L			02/10/23 19:17	2
trans-1,3-Dichloropropene	ND		2.0	1.3	ug/L			02/10/23 19:17	2
Trichloroethene	ND		2.0	0.88	ug/L			02/10/23 19:17	2
Trichlorofluoromethane	ND		2.0	0.90	ug/L			02/10/23 19:17	2
Vinyl chloride	160		2.0	0.90	ug/L			02/10/23 19:17	2
Xylenes, Total	6.7	F1 F2	4.0	0.84	ug/L			02/10/23 19:17	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Date Collected: 02/09/23 18:40

Matrix: Water

Date Received: 02/10/23 07:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		78 - 122		02/10/23 16:21	1000
Toluene-d8 (Surr)	93		78 - 122		02/10/23 19:07	5000
Toluene-d8 (Surr)	115		78 - 122		02/10/23 19:17	2
Dibromofluoromethane (Surr)	104		73 - 120		02/10/23 16:21	1000
Dibromofluoromethane (Surr)	101		73 - 120		02/10/23 19:07	5000
Dibromofluoromethane (Surr)	102		73 - 120		02/10/23 19:17	2
4-Bromofluorobenzene (Surr)	89		56 - 136		02/10/23 16:21	1000
4-Bromofluorobenzene (Surr)	85		56 - 136		02/10/23 19:07	5000
4-Bromofluorobenzene (Surr)	115		56 - 136		02/10/23 19:17	2
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		02/10/23 16:21	1000
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		02/10/23 19:07	5000
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		02/10/23 19:17	2

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		18	8.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
bis (2-chloroisopropyl) ether	ND		18	9.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4,5-Trichlorophenol	ND		89	35	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4,6-Trichlorophenol	ND		89	32	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4-Dichlorophenol	ND		36	4.7	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4-Dimethylphenol	ND		36	9.3	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4-Dinitrophenol	ND		180	110	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,4-Dinitrotoluene	ND		89	37	ug/L		02/10/23 08:46	02/11/23 07:29	20
2,6-Dinitrotoluene	ND		89	38	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Chloronaphthalene	ND		18	8.6	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Chlorophenol	ND		18	4.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Methylnaphthalene	13		3.6	2.0	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Methylphenol	ND		18	3.7	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Nitroaniline	ND		36	9.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
2-Nitrophenol	ND		36	10	ug/L		02/10/23 08:46	02/11/23 07:29	20
3,3'-Dichlorobenzidine	ND		89	21	ug/L		02/10/23 08:46	02/11/23 07:29	20
3-Nitroaniline	ND		36	10	ug/L		02/10/23 08:46	02/11/23 07:29	20
4,6-Dinitro-2-methylphenol	ND		89	50	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Bromophenyl phenyl ether	ND		36	8.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Chloro-3-methylphenol	ND		36	5.3	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Chloroaniline	ND		36	5.6	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Chlorophenyl phenyl ether	ND		36	9.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Nitroaniline	ND	+	36	16	ug/L		02/10/23 08:46	02/11/23 07:29	20
4-Nitrophenol	ND		180	39	ug/L		02/10/23 08:46	02/11/23 07:29	20
Acenaphthene	ND		3.6	3.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
Acenaphthylene	ND		3.6	2.2	ug/L		02/10/23 08:46	02/11/23 07:29	20
Acetophenone	ND		18	6.5	ug/L		02/10/23 08:46	02/11/23 07:29	20
Anthracene	ND		3.6	2.4	ug/L		02/10/23 08:46	02/11/23 07:29	20
Atrazine	ND		36	17	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzaldehyde	ND	+	36	14	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzo[a]anthracene	ND		3.6	3.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzo[a]pyrene	ND		3.6	3.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzo[b]fluoranthene	ND		3.6	2.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzo[g,h,i]perylene	ND		3.6	3.2	ug/L		02/10/23 08:46	02/11/23 07:29	20
Benzo[k]fluoranthene	ND		3.6	2.5	ug/L		02/10/23 08:46	02/11/23 07:29	20

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Date Collected: 02/09/23 18:40

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		18	8.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
Bis(2-chloroethyl)ether	ND		18	7.2	ug/L		02/10/23 08:46	02/11/23 07:29	20
Bis(2-ethylhexyl) phthalate	ND		89	40	ug/L		02/10/23 08:46	02/11/23 07:29	20
Butyl benzyl phthalate	ND		36	12	ug/L		02/10/23 08:46	02/11/23 07:29	20
Caprolactam	ND		89	17	ug/L		02/10/23 08:46	02/11/23 07:29	20
Carbazole	ND		18	8.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
Chrysene	ND		3.6	3.3	ug/L		02/10/23 08:46	02/11/23 07:29	20
Dibenz(a,h)anthracene	ND		3.6	2.7	ug/L		02/10/23 08:46	02/11/23 07:29	20
Dibenzofuran	ND		18	10	ug/L		02/10/23 08:46	02/11/23 07:29	20
Diethyl phthalate	ND		89	68	ug/L		02/10/23 08:46	02/11/23 07:29	20
Dimethyl phthalate	ND		36	9.2	ug/L		02/10/23 08:46	02/11/23 07:29	20
Di-n-butyl phthalate	ND		89	32	ug/L		02/10/23 08:46	02/11/23 07:29	20
Di-n-octyl phthalate	ND		36	15	ug/L		02/10/23 08:46	02/11/23 07:29	20
Fluoranthene	ND		3.6	2.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
Fluorene	ND		3.6	3.0	ug/L		02/10/23 08:46	02/11/23 07:29	20
Hexachlorobenzene	ND		3.6	2.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
Hexachlorobutadiene	ND		18	9.7	ug/L		02/10/23 08:46	02/11/23 07:29	20
Hexachlorocyclopentadiene	ND		180	31	ug/L		02/10/23 08:46	02/11/23 07:29	20
Hexachloroethane	ND		18	7.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
Indeno[1,2,3-cd]pyrene	ND		3.6	2.4	ug/L		02/10/23 08:46	02/11/23 07:29	20
Isophorone	ND		18	5.8	ug/L		02/10/23 08:46	02/11/23 07:29	20
N-Nitrosodi-n-propylamine	ND		18	4.5	ug/L		02/10/23 08:46	02/11/23 07:29	20
N-Nitrosodiphenylamine	ND		18	7.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
Naphthalene	6.3		3.6	1.9	ug/L		02/10/23 08:46	02/11/23 07:29	20
Nitrobenzene	ND		18	9.2	ug/L		02/10/23 08:46	02/11/23 07:29	20
Pentachlorophenol	ND		180	55	ug/L		02/10/23 08:46	02/11/23 07:29	20
Phenanthrene	ND		3.6	3.0	ug/L		02/10/23 08:46	02/11/23 07:29	20
Phenol	ND		18	2.3	ug/L		02/10/23 08:46	02/11/23 07:29	20
Pyrene	ND		3.6	3.1	ug/L		02/10/23 08:46	02/11/23 07:29	20
3 & 4 Methylphenol	ND		36	3.4	ug/L		02/10/23 08:46	02/11/23 07:29	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	56		46 - 137	02/10/23 08:46	02/11/23 07:29	20
Phenol-d5 (Surr)	46		26 - 120	02/10/23 08:46	02/11/23 07:29	20
Nitrobenzene-d5 (Surr)	83		24 - 120	02/10/23 08:46	02/11/23 07:29	20
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/10/23 08:46	02/11/23 07:29	20
2-Fluorobiphenyl (Surr)	91		33 - 120	02/10/23 08:46	02/11/23 07:29	20
2,4,6-Tribromophenol (Surr)	80		10 - 120	02/10/23 08:46	02/11/23 07:29	20

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	5600	B	490	67	ug/L		02/10/23 08:41	02/10/23 11:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		52 - 121	02/10/23 08:41	02/10/23 11:27	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 09:53	1
Barium	0.038	J B	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 09:53	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Date Collected: 02/09/23 18:40

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 09:53	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 09:53	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 09:53	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 09:53	1
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 09:53	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/10/23 16:12	1
Total Suspended Solids (SM 2540D-2015)	28		4.0	1.0	mg/L			02/10/23 09:07	1
Total Organic Carbon (SM 5310 C-2014)	280		20	7.0	mg/L			02/10/23 17:36	20
corrosivity by pH (SW846 9040C)	7.5	HF	0.1	0.1	SU			02/10/23 10:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-180173-6

Date Collected: 02/09/23 00:00

Matrix: Water

Date Received: 02/10/23 07:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 14:47	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			02/10/23 14:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			02/10/23 14:47	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 14:47	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			02/10/23 14:47	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			02/10/23 14:47	1
1,2,4-Trichlorobenzene	ND		1.0	0.77	ug/L			02/10/23 14:47	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.91	ug/L			02/10/23 14:47	1
Ethylene Dibromide	ND		1.0	0.41	ug/L			02/10/23 14:47	1
1,2-Dichlorobenzene	ND		1.0	0.48	ug/L			02/10/23 14:47	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			02/10/23 14:47	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			02/10/23 14:47	1
1,3-Dichlorobenzene	ND		1.0	0.45	ug/L			02/10/23 14:47	1
1,4-Dichlorobenzene	ND		1.0	0.41	ug/L			02/10/23 14:47	1
2-Butanone (MEK)	ND		10	1.2	ug/L			02/10/23 14:47	1
2-Hexanone	ND		10	1.1	ug/L			02/10/23 14:47	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			02/10/23 14:47	1
Acetone	ND		10	5.4	ug/L			02/10/23 14:47	1
Benzene	ND		1.0	0.42	ug/L			02/10/23 14:47	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			02/10/23 14:47	1
Bromoform	ND		1.0	0.76	ug/L			02/10/23 14:47	1
Bromomethane	ND		1.0	0.42	ug/L			02/10/23 14:47	1
Carbon disulfide	ND		1.0	0.59	ug/L			02/10/23 14:47	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			02/10/23 14:47	1
Chlorobenzene	ND		1.0	0.38	ug/L			02/10/23 14:47	1
Chloroethane	ND		1.0	0.83	ug/L			02/10/23 14:47	1
Chloroform	ND		1.0	0.47	ug/L			02/10/23 14:47	1
Chloromethane	ND		1.0	0.63	ug/L			02/10/23 14:47	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			02/10/23 14:47	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			02/10/23 14:47	1
Cyclohexane	ND		1.0	0.48	ug/L			02/10/23 14:47	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			02/10/23 14:47	1
Dichlorodifluoromethane	ND		1.0	0.35	ug/L			02/10/23 14:47	1
Ethylbenzene	ND		1.0	0.42	ug/L			02/10/23 14:47	1
Isopropylbenzene	ND		1.0	0.49	ug/L			02/10/23 14:47	1
Methyl acetate	ND		10	1.7	ug/L			02/10/23 14:47	1
Methyl tert-butyl ether	ND		1.0	0.47	ug/L			02/10/23 14:47	1
Methylcyclohexane	ND		1.0	0.33	ug/L			02/10/23 14:47	1
Methylene Chloride	ND		5.0	2.6	ug/L			02/10/23 14:47	1
Styrene	ND		1.0	0.45	ug/L			02/10/23 14:47	1
Tetrachloroethene	ND		1.0	0.44	ug/L			02/10/23 14:47	1
Toluene	ND		1.0	0.44	ug/L			02/10/23 14:47	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			02/10/23 14:47	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			02/10/23 14:47	1
Trichloroethene	ND		1.0	0.44	ug/L			02/10/23 14:47	1
Trichlorofluoromethane	ND		1.0	0.45	ug/L			02/10/23 14:47	1
Vinyl chloride	ND		1.0	0.45	ug/L			02/10/23 14:47	1
Xylenes, Total	ND		2.0	0.42	ug/L			02/10/23 14:47	1

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-180173-6

Date Collected: 02/09/23 00:00

Matrix: Water

Date Received: 02/10/23 07:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	98		78 - 122		02/10/23 14:47	1
Dibromofluoromethane (Surr)	102		73 - 120		02/10/23 14:47	1
4-Bromofluorobenzene (Surr)	84		56 - 136		02/10/23 14:47	1
1,2-Dichloroethane-d4 (Surr)	92		62 - 137		02/10/23 14:47	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-180173-1	WC-01/2023-02-09/	97	103	87	91
240-180173-1	WC-01/2023-02-09/	89	98	81	85
240-180173-1	WC-01/2023-02-09/	127 S1+	96	94	98
240-180173-2	WC-02/2023-02-09/	95	102	88	93
240-180173-2	WC-02/2023-02-09/	95	102	86	92
240-180173-2	WC-02/2023-02-09/	117	99	113	99
240-180173-3	WC-03/2023-02-09/	99	105	97	93
240-180173-3	WC-03/2023-02-09/	110	104	124	100
240-180173-4	WC-04/2023-02-09/	90	101	84	91
240-180173-4	WC-04/2023-02-09/	116	101	113	101
240-180173-5	WC-05/2023-02-09/	96	104	89	93
240-180173-5	WC-05/2023-02-09/	93	101	85	90
240-180173-5	WC-05/2023-02-09/	115	102	115	101
240-180173-5 MS	WC-05/2023-02-09/	97	94	89	86
240-180173-5 MS	WC-05/2023-02-09/	119	97	110	92
240-180173-5 MSD	WC-05/2023-02-09/	97	93	88	86
240-180173-5 MSD	WC-05/2023-02-09/	119	97	110	89
240-180173-6	TRIP BLANK	98	102	84	92
LCS 240-561615/11	Lab Control Sample	96	105	91	94
LCS 240-561615/6	Lab Control Sample	104	96	90	86
LCS 240-561656/5	Lab Control Sample	114	100	111	91
MB 240-561615/9	Method Blank	99	103	86	93
MB 240-561656/8	Method Blank	112	103	105	98

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180173-1	WC-01/2023-02-09/	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180173-2	WC-02/2023-02-09/	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180173-3	WC-03/2023-02-09/	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180173-4	WC-04/2023-02-09/	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180173-5	WC-05/2023-02-09/	56	46	83	0 S1-	91	80
LCS 240-561604/19-A	Lab Control Sample	95	69	100	92	81	79
MB 240-561604/18-A	Method Blank	106	57	87	58	78	62

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Eurofins Canton

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTPH (52-121)
240-180173-1	WC-01/2023-02-09/	419 S1+
240-180173-2	WC-02/2023-02-09/	113
240-180173-3	WC-03/2023-02-09/	119
240-180173-4	WC-04/2023-02-09/	200 S1+
240-180173-5	WC-05/2023-02-09/	81
LCS 240-561603/2-A	Lab Control Sample	91
MB 240-561603/1-A	Method Blank	78

Surrogate Legend

OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-561615/9
Matrix: Water
Analysis Batch: 561615

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 12:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			02/10/23 12:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			02/10/23 12:49	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 12:49	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			02/10/23 12:49	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			02/10/23 12:49	1
1,2,4-Trichlorobenzene	ND		1.0	0.77	ug/L			02/10/23 12:49	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.91	ug/L			02/10/23 12:49	1
Ethylene Dibromide	ND		1.0	0.41	ug/L			02/10/23 12:49	1
1,2-Dichlorobenzene	ND		1.0	0.48	ug/L			02/10/23 12:49	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			02/10/23 12:49	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			02/10/23 12:49	1
1,3-Dichlorobenzene	ND		1.0	0.45	ug/L			02/10/23 12:49	1
1,4-Dichlorobenzene	ND		1.0	0.41	ug/L			02/10/23 12:49	1
2-Butanone (MEK)	1.54	J	10	1.2	ug/L			02/10/23 12:49	1
2-Hexanone	ND		10	1.1	ug/L			02/10/23 12:49	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			02/10/23 12:49	1
Acetone	ND		10	5.4	ug/L			02/10/23 12:49	1
Benzene	ND		1.0	0.42	ug/L			02/10/23 12:49	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			02/10/23 12:49	1
Bromoform	ND		1.0	0.76	ug/L			02/10/23 12:49	1
Bromomethane	ND		1.0	0.42	ug/L			02/10/23 12:49	1
Carbon disulfide	ND		1.0	0.59	ug/L			02/10/23 12:49	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			02/10/23 12:49	1
Chlorobenzene	ND		1.0	0.38	ug/L			02/10/23 12:49	1
Chloroethane	ND		1.0	0.83	ug/L			02/10/23 12:49	1
Chloroform	ND		1.0	0.47	ug/L			02/10/23 12:49	1
Chloromethane	ND		1.0	0.63	ug/L			02/10/23 12:49	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			02/10/23 12:49	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			02/10/23 12:49	1
Cyclohexane	ND		1.0	0.48	ug/L			02/10/23 12:49	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			02/10/23 12:49	1
Dichlorodifluoromethane	ND		1.0	0.35	ug/L			02/10/23 12:49	1
Ethylbenzene	ND		1.0	0.42	ug/L			02/10/23 12:49	1
Isopropylbenzene	ND		1.0	0.49	ug/L			02/10/23 12:49	1
Methyl acetate	ND		10	1.7	ug/L			02/10/23 12:49	1
Methyl tert-butyl ether	ND		1.0	0.47	ug/L			02/10/23 12:49	1
Methylcyclohexane	ND		1.0	0.33	ug/L			02/10/23 12:49	1
Methylene Chloride	ND		5.0	2.6	ug/L			02/10/23 12:49	1
Styrene	ND		1.0	0.45	ug/L			02/10/23 12:49	1
Tetrachloroethene	ND		1.0	0.44	ug/L			02/10/23 12:49	1
Toluene	ND		1.0	0.44	ug/L			02/10/23 12:49	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			02/10/23 12:49	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			02/10/23 12:49	1
Trichloroethene	ND		1.0	0.44	ug/L			02/10/23 12:49	1
Trichlorofluoromethane	ND		1.0	0.45	ug/L			02/10/23 12:49	1
Vinyl chloride	ND		1.0	0.45	ug/L			02/10/23 12:49	1
Xylenes, Total	ND		2.0	0.42	ug/L			02/10/23 12:49	1

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-561615/9
Matrix: Water
Analysis Batch: 561615

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		78 - 122		02/10/23 12:49	1
Dibromofluoromethane (Surr)	103		73 - 120		02/10/23 12:49	1
4-Bromofluorobenzene (Surr)	86		56 - 136		02/10/23 12:49	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		02/10/23 12:49	1

Lab Sample ID: LCS 240-561615/11
Matrix: Water
Analysis Batch: 561615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120
4-Bromofluorobenzene (Surr)	91		56 - 136
1,2-Dichloroethane-d4 (Surr)	94		62 - 137

Lab Sample ID: LCS 240-561615/6
Matrix: Water
Analysis Batch: 561615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	25.0	22.6		ug/L		91	64 - 131
1,1,1,2-Tetrachloroethane	25.0	27.4		ug/L		110	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	25.1		ug/L		100	51 - 146
1,1,2-Trichloroethane	25.0	26.2		ug/L		105	70 - 138
1,1-Dichloroethane	25.0	24.2		ug/L		97	72 - 127
1,1-Dichloroethene	25.0	24.1		ug/L		96	63 - 134
1,2,4-Trichlorobenzene	25.0	24.9		ug/L		100	44 - 147
1,2-Dibromo-3-Chloropropane	25.0	22.9		ug/L		91	53 - 135
Ethylene Dibromide	25.0	25.6		ug/L		102	71 - 134
1,2-Dichlorobenzene	25.0	26.9		ug/L		108	78 - 120
1,2-Dichloroethane	25.0	23.7		ug/L		95	66 - 128
1,2-Dichloropropane	25.0	24.7		ug/L		99	75 - 133
1,3-Dichlorobenzene	25.0	27.5		ug/L		110	80 - 120
1,4-Dichlorobenzene	25.0	27.4		ug/L		109	80 - 120
2-Butanone (MEK)	50.0	47.2		ug/L		94	54 - 156
2-Hexanone	50.0	47.7		ug/L		95	43 - 167
4-Methyl-2-pentanone (MIBK)	50.0	45.0		ug/L		90	46 - 158
Acetone	50.0	47.6		ug/L		95	50 - 149
Benzene	25.0	24.9		ug/L		100	77 - 123
Dichlorobromomethane	25.0	23.6		ug/L		94	69 - 126
Bromoform	25.0	27.0		ug/L		108	57 - 129
Bromomethane	25.0	18.8		ug/L		75	36 - 142
Carbon disulfide	25.0	23.5		ug/L		94	43 - 140
Carbon tetrachloride	25.0	24.5		ug/L		98	55 - 137
Chlorobenzene	25.0	26.6		ug/L		106	80 - 121
Chloroethane	25.0	24.7		ug/L		99	38 - 152
Chloroform	25.0	24.5		ug/L		98	74 - 122

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-561615/6
Matrix: Water
Analysis Batch: 561615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	25.0	23.9		ug/L		96	47 - 143
cis-1,2-Dichloroethene	25.0	24.9		ug/L		99	77 - 123
cis-1,3-Dichloropropene	25.0	22.7		ug/L		91	64 - 130
Cyclohexane	25.0	24.6		ug/L		98	58 - 146
Chlorodibromomethane	25.0	26.5		ug/L		106	70 - 124
Dichlorodifluoromethane	25.0	22.6		ug/L		90	34 - 153
Ethylbenzene	25.0	25.7		ug/L		103	80 - 121
Isopropylbenzene	25.0	25.4		ug/L		101	74 - 128
Methyl acetate	50.0	45.7		ug/L		91	42 - 169
Methyl tert-butyl ether	25.0	22.1		ug/L		88	65 - 126
Methylcyclohexane	25.0	23.4		ug/L		94	62 - 136
Methylene Chloride	25.0	25.4		ug/L		102	71 - 125
Styrene	25.0	26.1		ug/L		104	80 - 135
Tetrachloroethene	25.0	26.8		ug/L		107	76 - 123
Toluene	25.0	26.4		ug/L		106	80 - 123
trans-1,2-Dichloroethene	25.0	24.4		ug/L		97	75 - 124
trans-1,3-Dichloropropene	25.0	23.5		ug/L		94	57 - 129
Trichloroethene	25.0	24.8		ug/L		99	70 - 122
Trichlorofluoromethane	25.0	24.5		ug/L		98	30 - 170
Vinyl chloride	25.0	26.3		ug/L		105	60 - 144
Xylenes, Total	50.0	51.2		ug/L		102	80 - 121
m-Xylene & p-Xylene	25.0	25.7		ug/L		103	80 - 120
o-Xylene	25.0	25.5		ug/L		102	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120
4-Bromofluorobenzene (Surr)	90		56 - 136
1,2-Dichloroethane-d4 (Surr)	86		62 - 137

Lab Sample ID: 240-180173-5 MS
Matrix: Water
Analysis Batch: 561615

Client Sample ID: WC-05/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		25000	22600		ug/L		91	60 - 130
1,1,2,2-Tetrachloroethane	ND		25000	27100		ug/L		108	54 - 145
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25000	23400		ug/L		93	41 - 147
1,1,2-Trichloroethane	ND		25000	26500		ug/L		106	69 - 131
1,1-Dichloroethane	ND		25000	24600		ug/L		99	68 - 125
1,1-Dichloroethene	ND		25000	23300		ug/L		93	56 - 135
1,2,4-Trichlorobenzene	ND		25000	25000		ug/L		100	29 - 156
1,2-Dibromo-3-Chloropropane	ND		25000	21800		ug/L		87	41 - 129
Ethylene Dibromide	ND		25000	25600		ug/L		102	69 - 125
1,2-Dichlorobenzene	ND		25000	26400		ug/L		106	73 - 120
1,2-Dichloroethane	ND		25000	24400		ug/L		98	63 - 126
1,2-Dichloropropane	ND		25000	25400		ug/L		102	69 - 130
1,3-Dichlorobenzene	ND		25000	26700		ug/L		107	73 - 120

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180173-5 MSD

Matrix: Water

Analysis Batch: 561615

Client Sample ID: WC-05/2023-02-09/

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25000	22400		ug/L		90	60 - 130	1	17
1,1,2,2-Tetrachloroethane	ND		25000	26900		ug/L		108	54 - 145	1	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25000	23000		ug/L		92	41 - 147	2	35
1,1,2-Trichloroethane	ND		25000	25800		ug/L		103	69 - 131	3	14
1,1-Dichloroethane	ND		25000	24500		ug/L		98	68 - 125	1	13
1,1-Dichloroethene	ND		25000	23400		ug/L		94	56 - 135	1	26
1,2,4-Trichlorobenzene	ND		25000	24800		ug/L		99	29 - 156	1	19
1,2-Dibromo-3-Chloropropane	ND		25000	21700		ug/L		87	41 - 129	0	22
Ethylene Dibromide	ND		25000	25400		ug/L		102	69 - 125	1	14
1,2-Dichlorobenzene	ND		25000	26300		ug/L		105	73 - 120	0	14
1,2-Dichloroethane	ND		25000	23900		ug/L		96	63 - 126	2	12
1,2-Dichloropropane	ND		25000	25300		ug/L		101	69 - 130	1	13
1,3-Dichlorobenzene	ND		25000	26500		ug/L		106	73 - 120	1	14
1,4-Dichlorobenzene	ND		25000	25900		ug/L		104	74 - 120	3	15
2-Butanone (MEK)	ND		50000	47200		ug/L		94	40 - 151	0	20
2-Hexanone	ND		50000	45400		ug/L		91	35 - 156	0	17
4-Methyl-2-pentanone (MIBK)	ND		50000	45700		ug/L		91	31 - 153	2	15
Acetone	ND		50000	44600		ug/L		89	33 - 149	4	34
Benzene	ND		25000	24700		ug/L		99	64 - 128	3	14
Dichlorobromomethane	ND		25000	23800		ug/L		95	62 - 125	2	13
Bromoform	ND		25000	26600		ug/L		106	47 - 125	0	15
Bromomethane	ND		25000	20500		ug/L		82	28 - 150	13	26
Carbon disulfide	ND		25000	22200		ug/L		89	38 - 140	3	23
Carbon tetrachloride	ND		25000	23700		ug/L		95	51 - 133	1	24
Chlorobenzene	ND		25000	26000		ug/L		104	74 - 121	2	14
Chloroethane	ND		25000	25000		ug/L		100	10 - 199	3	30
Chloroform	ND		25000	24100		ug/L		97	70 - 122	2	14
Chloromethane	ND		25000	23600		ug/L		95	32 - 149	7	27
cis-1,2-Dichloroethene	ND		25000	24800		ug/L		99	66 - 128	2	14
cis-1,3-Dichloropropene	ND		25000	23300		ug/L		93	47 - 125	3	13
Cyclohexane	ND		25000	23900		ug/L		96	42 - 147	2	35
Chlorodibromomethane	ND		25000	25800		ug/L		103	65 - 120	1	13
Dichlorodifluoromethane	ND		25000	20700		ug/L		83	38 - 139	3	35
Ethylbenzene	ND		25000	25200		ug/L		101	67 - 127	1	15
Isopropylbenzene	ND		25000	24500		ug/L		98	64 - 129	0	18
Methyl acetate	ND		50000	44500		ug/L		89	37 - 155	3	18
Methyl tert-butyl ether	ND		25000	21900		ug/L		88	47 - 134	2	16
Methylcyclohexane	ND		25000	22500		ug/L		90	39 - 144	3	35
Methylene Chloride	ND		25000	24900		ug/L		100	62 - 129	5	17
Styrene	ND		25000	25300		ug/L		101	70 - 139	2	18
Tetrachloroethene	ND		25000	28100		ug/L		112	62 - 131	1	20
Toluene	ND		25000	25000		ug/L		100	58 - 135	1	14
trans-1,2-Dichloroethene	ND		25000	23800		ug/L		95	56 - 136	1	15
trans-1,3-Dichloropropene	ND		25000	23000		ug/L		92	47 - 120	3	14
Trichloroethene	ND		25000	24800		ug/L		99	61 - 124	1	15
Trichlorofluoromethane	ND		25000	23600		ug/L		95	24 - 177	3	34
Vinyl chloride	ND		25000	25600		ug/L		102	43 - 157	2	24
Xylenes, Total	ND		50000	51200		ug/L		102	71 - 123	1	15

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180173-5 MSD

Client Sample ID: WC-05/2023-02-09/

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 561615

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	ND		25000	24800		ug/L		99	71 - 123	1	16
o-Xylene	ND		25000	26400		ug/L		106	70 - 125	1	15
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
Toluene-d8 (Surr)	97		78 - 122								
Dibromofluoromethane (Surr)	93		73 - 120								
4-Bromofluorobenzene (Surr)	88		56 - 136								
1,2-Dichloroethane-d4 (Surr)	86		62 - 137								

Lab Sample ID: MB 240-561656/8

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 561656

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 15:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			02/10/23 15:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			02/10/23 15:04	1
1,1,2-Trichloroethane	ND		1.0	0.48	ug/L			02/10/23 15:04	1
1,1-Dichloroethane	ND		1.0	0.47	ug/L			02/10/23 15:04	1
1,1-Dichloroethene	ND		1.0	0.49	ug/L			02/10/23 15:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.77	ug/L			02/10/23 15:04	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.91	ug/L			02/10/23 15:04	1
Ethylene Dibromide	ND		1.0	0.41	ug/L			02/10/23 15:04	1
1,2-Dichlorobenzene	ND		1.0	0.48	ug/L			02/10/23 15:04	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			02/10/23 15:04	1
1,2-Dichloropropane	ND		1.0	0.47	ug/L			02/10/23 15:04	1
1,3-Dichlorobenzene	ND		1.0	0.45	ug/L			02/10/23 15:04	1
1,4-Dichlorobenzene	ND		1.0	0.41	ug/L			02/10/23 15:04	1
2-Butanone (MEK)	ND		10	1.2	ug/L			02/10/23 15:04	1
2-Hexanone	ND		10	1.1	ug/L			02/10/23 15:04	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.99	ug/L			02/10/23 15:04	1
Acetone	ND		10	5.4	ug/L			02/10/23 15:04	1
Benzene	ND		1.0	0.42	ug/L			02/10/23 15:04	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			02/10/23 15:04	1
Bromoform	ND		1.0	0.76	ug/L			02/10/23 15:04	1
Bromomethane	ND		1.0	0.42	ug/L			02/10/23 15:04	1
Carbon disulfide	ND		1.0	0.59	ug/L			02/10/23 15:04	1
Carbon tetrachloride	ND		1.0	0.26	ug/L			02/10/23 15:04	1
Chlorobenzene	ND		1.0	0.38	ug/L			02/10/23 15:04	1
Chloroethane	ND		1.0	0.83	ug/L			02/10/23 15:04	1
Chloroform	ND		1.0	0.47	ug/L			02/10/23 15:04	1
Chloromethane	ND		1.0	0.63	ug/L			02/10/23 15:04	1
cis-1,2-Dichloroethene	ND		1.0	0.46	ug/L			02/10/23 15:04	1
cis-1,3-Dichloropropene	ND		1.0	0.61	ug/L			02/10/23 15:04	1
Cyclohexane	ND		1.0	0.48	ug/L			02/10/23 15:04	1
Chlorodibromomethane	ND		1.0	0.39	ug/L			02/10/23 15:04	1
Dichlorodifluoromethane	ND		1.0	0.35	ug/L			02/10/23 15:04	1
Ethylbenzene	ND		1.0	0.42	ug/L			02/10/23 15:04	1

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-561656/8
Matrix: Water
Analysis Batch: 561656

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Isopropylbenzene	ND		1.0	0.49	ug/L			02/10/23 15:04	1
Methyl acetate	ND		10	1.7	ug/L			02/10/23 15:04	1
Methyl tert-butyl ether	ND		1.0	0.47	ug/L			02/10/23 15:04	1
Methylcyclohexane	ND		1.0	0.33	ug/L			02/10/23 15:04	1
Methylene Chloride	ND		5.0	2.6	ug/L			02/10/23 15:04	1
Styrene	ND		1.0	0.45	ug/L			02/10/23 15:04	1
Tetrachloroethene	ND		1.0	0.44	ug/L			02/10/23 15:04	1
Toluene	ND		1.0	0.44	ug/L			02/10/23 15:04	1
trans-1,2-Dichloroethene	ND		1.0	0.51	ug/L			02/10/23 15:04	1
trans-1,3-Dichloropropene	ND		1.0	0.67	ug/L			02/10/23 15:04	1
Trichloroethene	ND		1.0	0.44	ug/L			02/10/23 15:04	1
Trichlorofluoromethane	ND		1.0	0.45	ug/L			02/10/23 15:04	1
Vinyl chloride	ND		1.0	0.45	ug/L			02/10/23 15:04	1
Xylenes, Total	ND		2.0	0.42	ug/L			02/10/23 15:04	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	112		78 - 122		02/10/23 15:04	1
Dibromofluoromethane (Surr)	103		73 - 120		02/10/23 15:04	1
4-Bromofluorobenzene (Surr)	105		56 - 136		02/10/23 15:04	1
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		02/10/23 15:04	1

Lab Sample ID: LCS 240-561656/5
Matrix: Water
Analysis Batch: 561656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	20.0	23.3		ug/L		116	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.7		ug/L		109	51 - 146
1,1,2-Trichloroethane	20.0	21.3		ug/L		106	70 - 138
1,1-Dichloroethane	20.0	21.3		ug/L		107	72 - 127
1,1-Dichloroethene	20.0	22.3		ug/L		111	63 - 134
1,2,4-Trichlorobenzene	20.0	21.3		ug/L		107	44 - 147
1,2-Dibromo-3-Chloropropane	20.0	22.1		ug/L		110	53 - 135
Ethylene Dibromide	20.0	20.3		ug/L		101	71 - 134
1,2-Dichlorobenzene	20.0	22.8		ug/L		114	78 - 120
1,2-Dichloroethane	20.0	19.9		ug/L		99	66 - 128
1,2-Dichloropropane	20.0	22.5		ug/L		112	75 - 133
1,3-Dichlorobenzene	20.0	22.2		ug/L		111	80 - 120
1,4-Dichlorobenzene	20.0	21.1		ug/L		106	80 - 120
2-Butanone (MEK)	40.0	47.6		ug/L		119	54 - 156
2-Hexanone	40.0	49.0		ug/L		123	43 - 167
4-Methyl-2-pentanone (MIBK)	40.0	46.0		ug/L		115	46 - 158
Acetone	40.0	45.4		ug/L		113	50 - 149
Benzene	20.0	22.3		ug/L		111	77 - 123
Dichlorobromomethane	20.0	19.2		ug/L		96	69 - 126
Bromoform	20.0	19.5		ug/L		98	57 - 129
Bromomethane	20.0	20.4		ug/L		102	36 - 142

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-561656/5
Matrix: Water
Analysis Batch: 561656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	20.0	19.2		ug/L		96	43 - 140
Carbon tetrachloride	20.0	20.7		ug/L		104	55 - 137
Chlorobenzene	20.0	21.5		ug/L		108	80 - 121
Chloroethane	20.0	21.1		ug/L		106	38 - 152
Chloroform	20.0	20.6		ug/L		103	74 - 122
Chloromethane	20.0	23.5		ug/L		118	47 - 143
cis-1,2-Dichloroethene	20.0	20.8		ug/L		104	77 - 123
cis-1,3-Dichloropropene	20.0	19.7		ug/L		99	64 - 130
Cyclohexane	20.0	22.7		ug/L		113	58 - 146
Chlorodibromomethane	20.0	20.2		ug/L		101	70 - 124
Dichlorodifluoromethane	20.0	20.1		ug/L		101	34 - 153
Ethylbenzene	20.0	22.1		ug/L		111	80 - 121
Isopropylbenzene	20.0	21.3		ug/L		107	74 - 128
Methyl acetate	40.0	39.7		ug/L		99	42 - 169
Methyl tert-butyl ether	20.0	18.1		ug/L		91	65 - 126
Methylcyclohexane	20.0	20.7		ug/L		103	62 - 136
Methylene Chloride	20.0	21.9		ug/L		110	71 - 125
Styrene	20.0	21.3		ug/L		106	80 - 135
Tetrachloroethene	20.0	22.6		ug/L		113	76 - 123
Toluene	20.0	22.1		ug/L		111	80 - 123
trans-1,2-Dichloroethene	20.0	21.5		ug/L		108	75 - 124
trans-1,3-Dichloropropene	20.0	20.0		ug/L		100	57 - 129
Trichloroethene	20.0	20.7		ug/L		104	70 - 122
Trichlorofluoromethane	20.0	21.1		ug/L		105	30 - 170
Vinyl chloride	20.0	21.4		ug/L		107	60 - 144
Xylenes, Total	40.0	44.5		ug/L		111	80 - 121
m-Xylene & p-Xylene	20.0	23.2		ug/L		116	80 - 120
o-Xylene	20.0	21.3		ug/L		107	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	114		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120
4-Bromofluorobenzene (Surr)	111		56 - 136
1,2-Dichloroethane-d4 (Surr)	91		62 - 137

Lab Sample ID: 240-180173-5 MS
Matrix: Water
Analysis Batch: 561656

Client Sample ID: WC-05/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		40.0	36.0		ug/L		90	60 - 130
1,1,2,2-Tetrachloroethane	ND		40.0	40.1		ug/L		100	54 - 145
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		40.0	37.9		ug/L		95	41 - 147
1,1,2-Trichloroethane	ND		40.0	37.5		ug/L		94	69 - 131
1,1-Dichloroethane	ND		40.0	37.9		ug/L		95	68 - 125
1,1-Dichloroethene	ND		40.0	39.5		ug/L		99	56 - 135
1,2,4-Trichlorobenzene	ND		40.0	21.4		ug/L		54	29 - 156
1,2-Dibromo-3-Chloropropane	ND		40.0	37.1		ug/L		93	41 - 129

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180173-5 MS

Client Sample ID: WC-05/2023-02-09/

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 561656

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Ethylene Dibromide	ND		40.0	33.8		ug/L		85	69 - 125
1,2-Dichlorobenzene	ND	F1 F2	40.0	23.0	F1	ug/L		58	73 - 120
1,2-Dichloroethane	ND		40.0	37.5		ug/L		94	63 - 126
1,2-Dichloropropane	ND		40.0	38.4		ug/L		96	69 - 130
1,3-Dichlorobenzene	ND	F1 F2	40.0	20.7	F1	ug/L		52	73 - 120
1,4-Dichlorobenzene	ND	F1	40.0	20.0	F1	ug/L		50	74 - 120
2-Butanone (MEK)	4.6	J	80.0	116		ug/L		139	40 - 151
2-Hexanone	ND		80.0	95.6		ug/L		120	35 - 156
4-Methyl-2-pentanone (MIBK)	3.6	J	80.0	103		ug/L		125	31 - 153
Acetone	ND		80.0	102		ug/L		128	33 - 149
Benzene	1.5	J	40.0	38.2		ug/L		92	64 - 128
Dichlorobromomethane	ND		40.0	31.4		ug/L		78	62 - 125
Bromoform	ND		40.0	25.1		ug/L		63	47 - 125
Bromomethane	ND		40.0	35.0		ug/L		87	28 - 150
Carbon disulfide	ND		40.0	29.0		ug/L		73	38 - 140
Carbon tetrachloride	ND		40.0	32.6		ug/L		81	51 - 133
Chlorobenzene	ND	F1 F2	40.0	26.6	F1	ug/L		66	74 - 121
Chloroethane	ND		40.0	39.6		ug/L		99	10 - 199
Chloroform	ND		40.0	36.7		ug/L		92	70 - 122
Chloromethane	ND		40.0	46.0		ug/L		115	32 - 149
cis-1,2-Dichloroethene	ND		40.0	38.1		ug/L		95	66 - 128
cis-1,3-Dichloropropene	ND		40.0	32.4		ug/L		81	47 - 125
Cyclohexane	ND		40.0	38.9		ug/L		97	42 - 147
Chlorodibromomethane	ND		40.0	31.6		ug/L		79	65 - 120
Dichlorodifluoromethane	ND		40.0	37.9		ug/L		95	38 - 139
Ethylbenzene	ND	F1 F2	40.0	25.8	F1	ug/L		64	67 - 127
Isopropylbenzene	ND	F1 F2	40.0	23.7	F1	ug/L		59	64 - 129
Methyl acetate	ND		80.0	84.5		ug/L		106	37 - 155
Methyl tert-butyl ether	ND		40.0	38.1		ug/L		95	47 - 134
Methylcyclohexane	ND		40.0	34.5		ug/L		86	39 - 144
Methylene Chloride	ND		40.0	40.0		ug/L		100	62 - 129
Styrene	ND	F1 F2	40.0	25.3	F1	ug/L		63	70 - 139
Tetrachloroethene	ND	F2	40.0	28.5		ug/L		71	62 - 131
Toluene	1.1	J F2	40.0	33.1		ug/L		80	58 - 135
trans-1,2-Dichloroethene	ND	F2	40.0	36.1		ug/L		90	56 - 136
trans-1,3-Dichloropropene	ND		40.0	32.7		ug/L		82	47 - 120
Trichloroethene	ND		40.0	34.4		ug/L		86	61 - 124
Trichlorofluoromethane	ND		40.0	38.1		ug/L		95	24 - 177
Vinyl chloride	160		40.0	177	4	ug/L		35	43 - 157
Xylenes, Total	6.7	F1 F2	80.0	53.4	F1	ug/L		58	71 - 123
m-Xylene & p-Xylene	3.1	J F1 F2	40.0	26.2	F1	ug/L		58	71 - 123
o-Xylene	3.6	F1 F2	40.0	27.2	F1	ug/L		59	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	119		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120
4-Bromofluorobenzene (Surr)	110		56 - 136
1,2-Dichloroethane-d4 (Surr)	92		62 - 137

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180173-5 MSD
Matrix: Water
Analysis Batch: 561656

Client Sample ID: WC-05/2023-02-09/
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1,1-Trichloroethane	ND		40.0	41.2		ug/L		103	60 - 130	13	17
1,1,2,2-Tetrachloroethane	ND		40.0	39.9		ug/L		100	54 - 145	0	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		40.0	42.0		ug/L		105	41 - 147	10	35
1,1,2-Trichloroethane	ND		40.0	39.5		ug/L		99	69 - 131	5	14
1,1-Dichloroethane	ND		40.0	42.3		ug/L		106	68 - 125	11	13
1,1-Dichloroethene	ND		40.0	43.3		ug/L		108	56 - 135	9	26
1,2,4-Trichlorobenzene	ND		40.0	24.0		ug/L		60	29 - 156	11	19
1,2-Dibromo-3-Chloropropane	ND		40.0	33.0		ug/L		82	41 - 129	12	22
Ethylene Dibromide	ND		40.0	37.2		ug/L		93	69 - 125	10	14
1,2-Dichlorobenzene	ND	F1 F2	40.0	27.3	F1 F2	ug/L		68	73 - 120	17	14
1,2-Dichloroethane	ND		40.0	38.6		ug/L		96	63 - 126	3	12
1,2-Dichloropropane	ND		40.0	43.0		ug/L		108	69 - 130	11	13
1,3-Dichlorobenzene	ND	F1 F2	40.0	24.8	F1 F2	ug/L		62	73 - 120	18	14
1,4-Dichlorobenzene	ND	F1	40.0	23.0	F1	ug/L		58	74 - 120	14	15
2-Butanone (MEK)	4.6	J	80.0	118		ug/L		142	40 - 151	2	20
2-Hexanone	ND		80.0	97.4		ug/L		122	35 - 156	2	17
4-Methyl-2-pentanone (MIBK)	3.6	J	80.0	103		ug/L		125	31 - 153	0	15
Acetone	ND		80.0	110		ug/L		137	33 - 149	7	34
Benzene	1.5	J	40.0	43.9		ug/L		106	64 - 128	14	14
Dichlorobromomethane	ND		40.0	33.5		ug/L		84	62 - 125	7	13
Bromoform	ND		40.0	25.7		ug/L		64	47 - 125	2	15
Bromomethane	ND		40.0	40.8		ug/L		102	28 - 150	15	26
Carbon disulfide	ND		40.0	33.7		ug/L		84	38 - 140	15	23
Carbon tetrachloride	ND		40.0	38.4		ug/L		96	51 - 133	16	24
Chlorobenzene	ND	F1 F2	40.0	31.4	F2	ug/L		78	74 - 121	17	14
Chloroethane	ND		40.0	43.1		ug/L		108	10 - 199	8	30
Chloroform	ND		40.0	39.1		ug/L		98	70 - 122	6	14
Chloromethane	ND		40.0	49.3		ug/L		123	32 - 149	7	27
cis-1,2-Dichloroethene	ND		40.0	41.9		ug/L		105	66 - 128	9	14
cis-1,3-Dichloropropene	ND		40.0	35.6		ug/L		89	47 - 125	9	13
Cyclohexane	ND		40.0	44.8		ug/L		112	42 - 147	14	35
Chlorodibromomethane	ND		40.0	33.9		ug/L		85	65 - 120	7	13
Dichlorodifluoromethane	ND		40.0	40.9		ug/L		102	38 - 139	8	35
Ethylbenzene	ND	F1 F2	40.0	31.6	F2	ug/L		79	67 - 127	20	15
Isopropylbenzene	ND	F1 F2	40.0	29.3	F2	ug/L		73	64 - 129	21	18
Methyl acetate	ND		80.0	87.9		ug/L		110	37 - 155	4	18
Methyl tert-butyl ether	ND		40.0	38.4		ug/L		96	47 - 134	1	16
Methylcyclohexane	ND		40.0	41.6		ug/L		104	39 - 144	19	35
Methylene Chloride	ND		40.0	44.4		ug/L		111	62 - 129	10	17
Styrene	ND	F1 F2	40.0	30.7	F2	ug/L		77	70 - 139	19	18
Tetrachloroethene	ND	F2	40.0	35.1	F2	ug/L		88	62 - 131	21	20
Toluene	1.1	J F2	40.0	38.5	F2	ug/L		93	58 - 135	15	14
trans-1,2-Dichloroethene	ND	F2	40.0	42.4	F2	ug/L		106	56 - 136	16	15
trans-1,3-Dichloropropene	ND		40.0	36.3		ug/L		91	47 - 120	10	14
Trichloroethene	ND		40.0	39.8		ug/L		99	61 - 124	15	15
Trichlorofluoromethane	ND		40.0	41.3		ug/L		103	24 - 177	8	34
Vinyl chloride	160		40.0	194	4	ug/L		78	43 - 157	9	24
Xylenes, Total	6.7	F1 F2	80.0	64.2	F2	ug/L		72	71 - 123	18	15

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180173-5 MSD
Matrix: Water
Analysis Batch: 561656

Client Sample ID: WC-05/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	3.1	J F1 F2	40.0	31.8	F2	ug/L		72	71 - 123	19	16
o-Xylene	3.6	F1 F2	40.0	32.4	F2	ug/L		72	70 - 125	17	15
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	119		78 - 122								
Dibromofluoromethane (Surr)	97		73 - 120								
4-Bromofluorobenzene (Surr)	110		56 - 136								
1,2-Dichloroethane-d4 (Surr)	89		62 - 137								

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-561604/18-A
Matrix: Water
Analysis Batch: 561702

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.0	0.49	ug/L		02/10/23 08:46	02/11/23 06:40	1
bis (2-chloroisopropyl) ether	ND		1.0	0.55	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4,5-Trichlorophenol	ND		5.0	2.0	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4,6-Trichlorophenol	ND		5.0	1.8	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4-Dichlorophenol	ND		2.0	0.26	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4-Dimethylphenol	ND		2.0	0.52	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4-Dinitrophenol	ND		10	6.2	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,4-Dinitrotoluene	ND		5.0	2.1	ug/L		02/10/23 08:46	02/11/23 06:40	1
2,6-Dinitrotoluene	ND		5.0	2.1	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Chloronaphthalene	ND		1.0	0.48	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Chlorophenol	ND		1.0	0.27	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Methylnaphthalene	ND		0.20	0.11	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Methylphenol	ND		1.0	0.21	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Nitroaniline	ND		2.0	0.51	ug/L		02/10/23 08:46	02/11/23 06:40	1
2-Nitrophenol	ND		2.0	0.56	ug/L		02/10/23 08:46	02/11/23 06:40	1
3,3'-Dichlorobenzidine	ND		5.0	1.2	ug/L		02/10/23 08:46	02/11/23 06:40	1
3-Nitroaniline	ND		2.0	0.57	ug/L		02/10/23 08:46	02/11/23 06:40	1
4,6-Dinitro-2-methylphenol	ND		5.0	2.8	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Bromophenyl phenyl ether	ND		2.0	0.50	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Chloro-3-methylphenol	ND		2.0	0.30	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Chloroaniline	ND		2.0	0.32	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Chlorophenyl phenyl ether	ND		2.0	0.55	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Nitroaniline	ND		2.0	0.92	ug/L		02/10/23 08:46	02/11/23 06:40	1
4-Nitrophenol	ND		10	2.2	ug/L		02/10/23 08:46	02/11/23 06:40	1
Acenaphthene	ND		0.20	0.17	ug/L		02/10/23 08:46	02/11/23 06:40	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/10/23 08:46	02/11/23 06:40	1
Acetophenone	ND		1.0	0.37	ug/L		02/10/23 08:46	02/11/23 06:40	1
Anthracene	ND		0.20	0.14	ug/L		02/10/23 08:46	02/11/23 06:40	1
Atrazine	ND		2.0	0.95	ug/L		02/10/23 08:46	02/11/23 06:40	1
Benzaldehyde	ND		2.0	0.76	ug/L		02/10/23 08:46	02/11/23 06:40	1
Benzo[a]anthracene	ND		0.20	0.17	ug/L		02/10/23 08:46	02/11/23 06:40	1
Benzo[a]pyrene	ND		0.20	0.17	ug/L		02/10/23 08:46	02/11/23 06:40	1
Benzo[b]fluoranthene	ND		0.20	0.15	ug/L		02/10/23 08:46	02/11/23 06:40	1

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-561604/18-A
Matrix: Water
Analysis Batch: 561702

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.20	0.18	ug/L		02/10/23 08:46	02/11/23 06:40	1
Benzo[k]fluoranthene	ND		0.20	0.14	ug/L		02/10/23 08:46	02/11/23 06:40	1
Bis(2-chloroethoxy)methane	ND		1.0	0.46	ug/L		02/10/23 08:46	02/11/23 06:40	1
Bis(2-chloroethyl)ether	ND		1.0	0.40	ug/L		02/10/23 08:46	02/11/23 06:40	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		02/10/23 08:46	02/11/23 06:40	1
Butyl benzyl phthalate	ND		2.0	0.67	ug/L		02/10/23 08:46	02/11/23 06:40	1
Caprolactam	ND		5.0	0.93	ug/L		02/10/23 08:46	02/11/23 06:40	1
Carbazole	ND		1.0	0.49	ug/L		02/10/23 08:46	02/11/23 06:40	1
Chrysene	ND		0.20	0.19	ug/L		02/10/23 08:46	02/11/23 06:40	1
Dibenz(a,h)anthracene	ND		0.20	0.15	ug/L		02/10/23 08:46	02/11/23 06:40	1
Dibenzofuran	ND		1.0	0.56	ug/L		02/10/23 08:46	02/11/23 06:40	1
Diethyl phthalate	ND		5.0	3.8	ug/L		02/10/23 08:46	02/11/23 06:40	1
Dimethyl phthalate	ND		2.0	0.52	ug/L		02/10/23 08:46	02/11/23 06:40	1
Di-n-butyl phthalate	ND		5.0	1.8	ug/L		02/10/23 08:46	02/11/23 06:40	1
Di-n-octyl phthalate	ND		2.0	0.82	ug/L		02/10/23 08:46	02/11/23 06:40	1
Fluoranthene	ND		0.20	0.16	ug/L		02/10/23 08:46	02/11/23 06:40	1
Fluorene	ND		0.20	0.17	ug/L		02/10/23 08:46	02/11/23 06:40	1
Hexachlorobenzene	ND		0.20	0.16	ug/L		02/10/23 08:46	02/11/23 06:40	1
Hexachlorobutadiene	ND		1.0	0.54	ug/L		02/10/23 08:46	02/11/23 06:40	1
Hexachlorocyclopentadiene	ND		10	1.8	ug/L		02/10/23 08:46	02/11/23 06:40	1
Hexachloroethane	ND		1.0	0.40	ug/L		02/10/23 08:46	02/11/23 06:40	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.14	ug/L		02/10/23 08:46	02/11/23 06:40	1
Isophorone	ND		1.0	0.32	ug/L		02/10/23 08:46	02/11/23 06:40	1
N-Nitrosodi-n-propylamine	ND		1.0	0.25	ug/L		02/10/23 08:46	02/11/23 06:40	1
N-Nitrosodiphenylamine	ND		1.0	0.44	ug/L		02/10/23 08:46	02/11/23 06:40	1
Naphthalene	ND		0.20	0.11	ug/L		02/10/23 08:46	02/11/23 06:40	1
Nitrobenzene	ND		1.0	0.51	ug/L		02/10/23 08:46	02/11/23 06:40	1
Pentachlorophenol	ND		10	3.1	ug/L		02/10/23 08:46	02/11/23 06:40	1
Phenanthrene	ND		0.20	0.17	ug/L		02/10/23 08:46	02/11/23 06:40	1
Phenol	ND		1.0	0.13	ug/L		02/10/23 08:46	02/11/23 06:40	1
Pyrene	ND		0.20	0.18	ug/L		02/10/23 08:46	02/11/23 06:40	1
3 & 4 Methylphenol	ND		2.0	0.19	ug/L		02/10/23 08:46	02/11/23 06:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	02/10/23 08:46	02/11/23 06:40	1
Phenol-d5 (Surr)	57		26 - 120	02/10/23 08:46	02/11/23 06:40	1
Nitrobenzene-d5 (Surr)	87		24 - 120	02/10/23 08:46	02/11/23 06:40	1
2-Fluorophenol (Surr)	58		19 - 120	02/10/23 08:46	02/11/23 06:40	1
2-Fluorobiphenyl (Surr)	78		33 - 120	02/10/23 08:46	02/11/23 06:40	1
2,4,6-Tribromophenol (Surr)	62		10 - 120	02/10/23 08:46	02/11/23 06:40	1

Lab Sample ID: LCS 240-561604/19-A
Matrix: Water
Analysis Batch: 561702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	32.0	26.1		ug/L		82	48 - 120
bis (2-chloroisopropyl) ether	32.0	24.7		ug/L		77	41 - 120

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-561604/19-A
Matrix: Water
Analysis Batch: 561702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,5-Trichlorophenol	32.0	29.1		ug/L		91	52 - 123
2,4,6-Trichlorophenol	32.0	27.4		ug/L		86	51 - 120
2,4-Dichlorophenol	32.0	28.4		ug/L		89	53 - 120
2,4-Dimethylphenol	32.0	23.8		ug/L		74	44 - 120
2,4-Dinitrophenol	64.0	46.8		ug/L		73	11 - 139
2,4-Dinitrotoluene	32.0	27.4		ug/L		86	58 - 125
2,6-Dinitrotoluene	32.0	27.6		ug/L		86	54 - 132
2-Chloronaphthalene	32.0	27.7		ug/L		87	51 - 120
2-Chlorophenol	32.0	28.5		ug/L		89	46 - 120
2-Methylnaphthalene	32.0	25.0		ug/L		78	49 - 120
2-Methylphenol	32.0	27.0		ug/L		84	45 - 120
2-Nitroaniline	32.0	30.8		ug/L		96	57 - 121
2-Nitrophenol	32.0	26.2		ug/L		82	51 - 120
3,3'-Dichlorobenzidine	64.0	53.0		ug/L		83	51 - 154
3-Nitroaniline	32.0	31.1		ug/L		97	47 - 123
4,6-Dinitro-2-methylphenol	64.0	56.3		ug/L		88	49 - 130
4-Bromophenyl phenyl ether	32.0	25.0		ug/L		78	58 - 125
4-Chloro-3-methylphenol	32.0	26.6		ug/L		83	52 - 120
4-Chloroaniline	32.0	3.74		ug/L		12	10 - 126
4-Chlorophenyl phenyl ether	32.0	25.2		ug/L		79	55 - 120
4-Nitroaniline	32.0	44.9	+	ug/L		140	56 - 127
4-Nitrophenol	64.0	46.1		ug/L		72	10 - 120
Acenaphthene	32.0	30.1		ug/L		94	54 - 120
Acenaphthylene	32.0	26.7		ug/L		83	50 - 120
Acetophenone	32.0	24.4		ug/L		76	47 - 120
Anthracene	32.0	25.5		ug/L		80	58 - 121
Atrazine	32.0	28.4		ug/L		89	68 - 126
Benzaldehyde	32.0	56.0	+	ug/L		175	26 - 147
Benzo[a]anthracene	32.0	28.5		ug/L		89	61 - 120
Benzo[a]pyrene	32.0	26.7		ug/L		83	56 - 131
Benzo[b]fluoranthene	32.0	25.5		ug/L		80	57 - 130
Benzo[g,h,i]perylene	32.0	26.9		ug/L		84	58 - 120
Benzo[k]fluoranthene	32.0	26.3		ug/L		82	53 - 137
Bis(2-chloroethoxy)methane	32.0	26.9		ug/L		84	49 - 120
Bis(2-chloroethyl)ether	32.0	24.5		ug/L		76	40 - 120
Bis(2-ethylhexyl) phthalate	32.0	27.3		ug/L		85	60 - 126
Butyl benzyl phthalate	32.0	28.9		ug/L		90	58 - 124
Caprolactam	32.0	6.97		ug/L		22	10 - 120
Carbazole	32.0	27.7		ug/L		87	60 - 130
Chrysene	32.0	28.6		ug/L		89	57 - 120
Dibenz(a,h)anthracene	32.0	29.0		ug/L		91	58 - 120
Dibenzofuran	32.0	25.1		ug/L		78	54 - 120
Diethyl phthalate	32.0	29.9		ug/L		94	55 - 120
Dimethyl phthalate	32.0	26.5		ug/L		83	49 - 125
Di-n-butyl phthalate	32.0	28.2		ug/L		88	59 - 130
Di-n-octyl phthalate	32.0	25.8		ug/L		81	57 - 126
Fluoranthene	32.0	26.4		ug/L		82	58 - 128
Fluorene	32.0	28.1		ug/L		88	55 - 120
Hexachlorobenzene	32.0	27.4		ug/L		86	55 - 120

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-561604/19-A
Matrix: Water
Analysis Batch: 561702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobutadiene	32.0	23.1		ug/L		72	41 - 120
Hexachlorocyclopentadiene	32.0	25.7		ug/L		80	15 - 120
Hexachloroethane	32.0	24.8		ug/L		77	39 - 120
Indeno[1,2,3-cd]pyrene	32.0	29.2		ug/L		91	59 - 122
Isophorone	32.0	26.6		ug/L		83	51 - 120
N-Nitrosodi-n-propylamine	32.0	26.2		ug/L		82	49 - 120
N-Nitrosodiphenylamine	32.0	26.0		ug/L		81	56 - 125
Naphthalene	32.0	23.7		ug/L		74	46 - 120
Nitrobenzene	32.0	27.2		ug/L		85	47 - 120
Pentachlorophenol	64.0	49.1		ug/L		77	19 - 132
Phenanthrene	32.0	24.5		ug/L		76	55 - 120
Phenol	32.0	21.4		ug/L		67	10 - 120
Pyrene	32.0	26.7		ug/L		83	59 - 120
3 & 4 Methylphenol	32.0	25.3		ug/L		79	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	95		46 - 137
Phenol-d5 (Surr)	69		26 - 120
Nitrobenzene-d5 (Surr)	100		24 - 120
2-Fluorophenol (Surr)	92		19 - 120
2-Fluorobiphenyl (Surr)	81		33 - 120
2,4,6-Tribromophenol (Surr)	79		10 - 120

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-561603/1-A
Matrix: Water
Analysis Batch: 561534

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561603

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	122	J	500	68	ug/L		02/10/23 08:41	02/10/23 10:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	78		52 - 121	02/10/23 08:41	02/10/23 10:10	1

Lab Sample ID: LCS 240-561603/2-A
Matrix: Water
Analysis Batch: 561536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10 - C28]	2000	1550		ug/L		77	56 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	91		52 - 121

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-561653/2-A
Matrix: Water
Analysis Batch: 561721

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 08:47	1
Barium	ND		0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 08:47	1
Cadmium	ND		0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 08:47	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 08:47	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 08:47	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 08:47	1
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 08:47	1

Lab Sample ID: LCS 240-561653/3-A
Matrix: Water
Analysis Batch: 561721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.10		mg/L		105	50 - 150
Barium	2.00	1.83		mg/L		92	50 - 150
Cadmium	1.00	1.01		mg/L		101	50 - 150
Chromium	1.00	0.924		mg/L		92	50 - 150
Lead	1.00	0.870		mg/L		87	50 - 150
Selenium	2.00	2.09		mg/L		105	50 - 150
Silver	0.100	0.101		mg/L		101	50 - 150

Lab Sample ID: LB 240-561562/1-B
Matrix: Water
Analysis Batch: 561721

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 561653

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/10/23 14:00	02/11/23 08:43	1
Barium	0.00205	J	0.50	0.0013	mg/L		02/10/23 14:00	02/11/23 08:43	1
Cadmium	ND		0.050	0.00020	mg/L		02/10/23 14:00	02/11/23 08:43	1
Chromium	ND		0.050	0.0040	mg/L		02/10/23 14:00	02/11/23 08:43	1
Lead	ND		0.050	0.0028	mg/L		02/10/23 14:00	02/11/23 08:43	1
Selenium	ND		0.050	0.0060	mg/L		02/10/23 14:00	02/11/23 08:43	1
Silver	ND		0.050	0.00062	mg/L		02/10/23 14:00	02/11/23 08:43	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-561655/2-A
Matrix: Water
Analysis Batch: 561714

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 561655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:09	1

Lab Sample ID: LCS 240-561655/3-A
Matrix: Water
Analysis Batch: 561714

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 561655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00540		mg/L		108	80 - 120

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-561562/1-C
Matrix: Water
Analysis Batch: 561714

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 561655

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/10/23 14:00	02/10/23 16:07	1

Method: 1010B - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-561674/1
Matrix: Water
Analysis Batch: 561674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ignitability (Flashpoint)	81.0	82.7		Fahrenheit		102	97 - 103

Lab Sample ID: 240-180173-1 DU
Matrix: Water
Analysis Batch: 561674

Client Sample ID: WC-01/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ignitability (Flashpoint)	>200		>200		Degrees F		NC	20

Method: 2540D-2015 - Total Suspended Solids (Dried at 103-105°C)

Lab Sample ID: MB 240-561611/1
Matrix: Water
Analysis Batch: 561611

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.0	mg/L			02/10/23 09:07	1

Lab Sample ID: LCS 240-561611/2
Matrix: Water
Analysis Batch: 561611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	66.2	60.5		mg/L		91	64 - 120

Lab Sample ID: 240-180173-1 DU
Matrix: Water
Analysis Batch: 561611

Client Sample ID: WC-01/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	18000		26500	F3	mg/L		38	10

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 240-561717/4
Matrix: Water
Analysis Batch: 561717

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.35	mg/L			02/10/23 16:21	1

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 240-561717/5
Matrix: Water
Analysis Batch: 561717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	17.1		mg/L		93	85 - 115
TOC Result 1	18.3	17.4		mg/L		95	85 - 115
TOC Result 2	18.3	16.9		mg/L		92	85 - 115

Method: 9040C - pH

Lab Sample ID: LCS 240-561612/2
Matrix: Water
Analysis Batch: 561612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

Lab Sample ID: 240-180173-1 DU
Matrix: Water
Analysis Batch: 561612

Client Sample ID: WC-01/2023-02-09/
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
corrosivity by pH	8.8	HF	8.8		SU		0.2	20

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

GC/MS VOA

Analysis Batch: 561615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	8260D	
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	8260D	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	8260D	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	8260D	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	8260D	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	8260D	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	8260D	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	8260D	
240-180173-6	TRIP BLANK	Total/NA	Water	8260D	
MB 240-561615/9	Method Blank	Total/NA	Water	8260D	
LCS 240-561615/11	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-561615/6	Lab Control Sample	Total/NA	Water	8260D	
240-180173-5 MS	WC-05/2023-02-09/	Total/NA	Water	8260D	
240-180173-5 MSD	WC-05/2023-02-09/	Total/NA	Water	8260D	

Analysis Batch: 561656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	8260D	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	8260D	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	8260D	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	8260D	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	8260D	
MB 240-561656/8	Method Blank	Total/NA	Water	8260D	
LCS 240-561656/5	Lab Control Sample	Total/NA	Water	8260D	
240-180173-5 MS	WC-05/2023-02-09/	Total/NA	Water	8260D	
240-180173-5 MSD	WC-05/2023-02-09/	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 561604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	3510C LVI	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	3510C LVI	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	3510C LVI	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	3510C LVI	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	3510C LVI	
MB 240-561604/18-A	Method Blank	Total/NA	Water	3510C LVI	
LCS 240-561604/19-A	Lab Control Sample	Total/NA	Water	3510C LVI	

Analysis Batch: 561702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	8270E	561604
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	8270E	561604
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	8270E	561604
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	8270E	561604
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	8270E	561604
MB 240-561604/18-A	Method Blank	Total/NA	Water	8270E	561604
LCS 240-561604/19-A	Lab Control Sample	Total/NA	Water	8270E	561604

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

GC Semi VOA

Analysis Batch: 561534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	8015D	561603
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	8015D	561603
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	8015D	561603
MB 240-561603/1-A	Method Blank	Total/NA	Water	8015D	561603

Analysis Batch: 561536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	8015D	561603
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	8015D	561603
LCS 240-561603/2-A	Lab Control Sample	Total/NA	Water	8015D	561603

Prep Batch: 561603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	3511	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	3511	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	3511	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	3511	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	3511	
MB 240-561603/1-A	Method Blank	Total/NA	Water	3511	
LCS 240-561603/2-A	Lab Control Sample	Total/NA	Water	3511	

Metals

Leach Batch: 561562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	TCLP	Water	1311	
240-180173-2	WC-02/2023-02-09/	TCLP	Water	1311	
240-180173-3	WC-03/2023-02-09/	TCLP	Water	1311	
240-180173-4	WC-04/2023-02-09/	TCLP	Water	1311	
240-180173-5	WC-05/2023-02-09/	TCLP	Water	1311	
LB 240-561562/1-B	Method Blank	TCLP	Water	1311	
LB 240-561562/1-C	Method Blank	TCLP	Water	1311	

Prep Batch: 561653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	TCLP	Water	3010A	561562
240-180173-2	WC-02/2023-02-09/	TCLP	Water	3010A	561562
240-180173-3	WC-03/2023-02-09/	TCLP	Water	3010A	561562
240-180173-4	WC-04/2023-02-09/	TCLP	Water	3010A	561562
240-180173-5	WC-05/2023-02-09/	TCLP	Water	3010A	561562
LB 240-561562/1-B	Method Blank	TCLP	Water	3010A	561562
MB 240-561653/2-A	Method Blank	Total/NA	Water	3010A	
LCS 240-561653/3-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 561655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	TCLP	Water	7470A	561562
240-180173-2	WC-02/2023-02-09/	TCLP	Water	7470A	561562
240-180173-3	WC-03/2023-02-09/	TCLP	Water	7470A	561562
240-180173-4	WC-04/2023-02-09/	TCLP	Water	7470A	561562
240-180173-5	WC-05/2023-02-09/	TCLP	Water	7470A	561562

Eurofins Canton

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Metals (Continued)

Prep Batch: 561655 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-561562/1-C	Method Blank	TCLP	Water	7470A	561562
MB 240-561655/2-A	Method Blank	Total/NA	Water	7470A	
LCS 240-561655/3-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 561714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	TCLP	Water	7470A	561655
240-180173-2	WC-02/2023-02-09/	TCLP	Water	7470A	561655
240-180173-3	WC-03/2023-02-09/	TCLP	Water	7470A	561655
240-180173-4	WC-04/2023-02-09/	TCLP	Water	7470A	561655
240-180173-5	WC-05/2023-02-09/	TCLP	Water	7470A	561655
LB 240-561562/1-C	Method Blank	TCLP	Water	7470A	561655
MB 240-561655/2-A	Method Blank	Total/NA	Water	7470A	561655
LCS 240-561655/3-A	Lab Control Sample	Total/NA	Water	7470A	561655

Analysis Batch: 561721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	TCLP	Water	6010D	561653
240-180173-2	WC-02/2023-02-09/	TCLP	Water	6010D	561653
240-180173-3	WC-03/2023-02-09/	TCLP	Water	6010D	561653
240-180173-4	WC-04/2023-02-09/	TCLP	Water	6010D	561653
240-180173-5	WC-05/2023-02-09/	TCLP	Water	6010D	561653
LB 240-561562/1-B	Method Blank	TCLP	Water	6010D	561653
MB 240-561653/2-A	Method Blank	Total/NA	Water	6010D	561653
LCS 240-561653/3-A	Lab Control Sample	Total/NA	Water	6010D	561653

General Chemistry

Analysis Batch: 561611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	2540D-2015	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	2540D-2015	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	2540D-2015	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	2540D-2015	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	2540D-2015	
MB 240-561611/1	Method Blank	Total/NA	Water	2540D-2015	
LCS 240-561611/2	Lab Control Sample	Total/NA	Water	2540D-2015	
240-180173-1 DU	WC-01/2023-02-09/	Total/NA	Water	2540D-2015	

Analysis Batch: 561612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	9040C	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	9040C	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	9040C	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	9040C	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	9040C	
LCS 240-561612/2	Lab Control Sample	Total/NA	Water	9040C	
240-180173-1 DU	WC-01/2023-02-09/	Total/NA	Water	9040C	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

General Chemistry

Analysis Batch: 561674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	1010B	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	1010B	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	1010B	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	1010B	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	1010B	
LCS 240-561674/1	Lab Control Sample	Total/NA	Water	1010B	
240-180173-1 DU	WC-01/2023-02-09/	Total/NA	Water	1010B	

Analysis Batch: 561717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-1	WC-01/2023-02-09/	Total/NA	Water	5310 C-2014	
240-180173-2	WC-02/2023-02-09/	Total/NA	Water	5310 C-2014	
240-180173-3	WC-03/2023-02-09/	Total/NA	Water	5310 C-2014	
240-180173-4	WC-04/2023-02-09/	Total/NA	Water	5310 C-2014	
240-180173-5	WC-05/2023-02-09/	Total/NA	Water	5310 C-2014	
MB 240-561717/4	Method Blank	Total/NA	Water	5310 C-2014	
LCS 240-561717/5	Lab Control Sample	Total/NA	Water	5310 C-2014	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-01/2023-02-09/
Date Collected: 02/09/23 15:50
Date Received: 02/10/23 07:00

Lab Sample ID: 240-180173-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	561656	SAM	EET CAN	02/10/23 21:23
Total/NA	Analysis	8260D		2500	561615	SAM	EET CAN	02/10/23 16:45
Total/NA	Analysis	8260D		5000	561615	SAM	EET CAN	02/10/23 20:18
Total/NA	Prep	3510C LVI			561604	MDH	EET CAN	02/10/23 08:46
Total/NA	Analysis	8270E		100	561702	TMH	EET CAN	02/11/23 08:16
Total/NA	Prep	3511			561603	LKG	EET CAN	02/10/23 08:41
Total/NA	Analysis	8015D		200	561534	EPF	EET CAN	02/10/23 11:27
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	3010A			561653	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	6010D		1	561721	KLC	EET CAN	02/11/23 09:36
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	7470A			561655	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	7470A		1	561714	AJC	EET CAN	02/10/23 16:21
Total/NA	Analysis	1010B		1	561674	JWW	EET CAN	02/10/23 13:30
Total/NA	Analysis	2540D-2015		1	561611	MED	EET CAN	02/10/23 09:07
Total/NA	Analysis	5310 C-2014		200	561717	JMB	EET CAN	02/10/23 16:46
Total/NA	Analysis	9040C		1	561612	BLW	EET CAN	02/10/23 09:36

Client Sample ID: WC-02/2023-02-09/
Date Collected: 02/09/23 16:30
Date Received: 02/10/23 07:00

Lab Sample ID: 240-180173-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	561656	SAM	EET CAN	02/10/23 16:45
Total/NA	Analysis	8260D		1000	561615	SAM	EET CAN	02/10/23 15:34
Total/NA	Analysis	8260D		5000	561615	SAM	EET CAN	02/10/23 18:43
Total/NA	Prep	3510C LVI			561604	MDH	EET CAN	02/10/23 08:46
Total/NA	Analysis	8270E		100	561702	TMH	EET CAN	02/11/23 08:39
Total/NA	Prep	3511			561603	LKG	EET CAN	02/10/23 08:41
Total/NA	Analysis	8015D		50	561534	EPF	EET CAN	02/10/23 11:55
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	3010A			561653	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	6010D		1	561721	KLC	EET CAN	02/11/23 09:40
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	7470A			561655	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	7470A		1	561714	AJC	EET CAN	02/10/23 16:23
Total/NA	Analysis	1010B		1	561674	JWW	EET CAN	02/10/23 14:28
Total/NA	Analysis	2540D-2015		1	561611	MED	EET CAN	02/10/23 09:07
Total/NA	Analysis	5310 C-2014		20	561717	JMB	EET CAN	02/10/23 16:59
Total/NA	Analysis	9040C		1	561612	BLW	EET CAN	02/10/23 10:03

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-03/2023-02-09/

Lab Sample ID: 240-180173-3

Date Collected: 02/09/23 18:20

Matrix: Water

Date Received: 02/10/23 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	561656	SAM	EET CAN	02/10/23 15:29
Total/NA	Analysis	8260D		25	561615	SAM	EET CAN	02/10/23 15:10
Total/NA	Prep	3510C LVI			561604	MDH	EET CAN	02/10/23 08:46
Total/NA	Analysis	8270E		50	561702	TMH	EET CAN	02/11/23 07:52
Total/NA	Prep	3511			561603	LKG	EET CAN	02/10/23 08:41
Total/NA	Analysis	8015D		5	561534	EPF	EET CAN	02/10/23 12:22
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	3010A			561653	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	6010D		1	561721	KLC	EET CAN	02/11/23 09:44
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	7470A			561655	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	7470A		1	561714	AJC	EET CAN	02/10/23 16:25
Total/NA	Analysis	1010B		1	561674	JWW	EET CAN	02/10/23 15:10
Total/NA	Analysis	2540D-2015		1	561611	MED	EET CAN	02/10/23 09:07
Total/NA	Analysis	5310 C-2014		50	561717	JMB	EET CAN	02/10/23 17:11
Total/NA	Analysis	9040C		1	561612	BLW	EET CAN	02/10/23 10:16

Client Sample ID: WC-04/2023-02-09/

Lab Sample ID: 240-180173-4

Date Collected: 02/09/23 18:30

Matrix: Water

Date Received: 02/10/23 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	561656	SAM	EET CAN	02/10/23 18:01
Total/NA	Analysis	8260D		1000	561615	SAM	EET CAN	02/10/23 19:54
Total/NA	Prep	3510C LVI			561604	MDH	EET CAN	02/10/23 08:46
Total/NA	Analysis	8270E		100	561702	TMH	EET CAN	02/11/23 09:02
Total/NA	Prep	3511			561603	LKG	EET CAN	02/10/23 08:41
Total/NA	Analysis	8015D		500	561536	EPF	EET CAN	02/10/23 11:55
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	3010A			561653	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	6010D		1	561721	KLC	EET CAN	02/11/23 09:48
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	7470A			561655	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	7470A		1	561714	AJC	EET CAN	02/10/23 16:32
Total/NA	Analysis	1010B		1	561674	JWW	EET CAN	02/10/23 15:47
Total/NA	Analysis	2540D-2015		1	561611	MED	EET CAN	02/10/23 09:07
Total/NA	Analysis	5310 C-2014		20	561717	JMB	EET CAN	02/10/23 17:24
Total/NA	Analysis	9040C		1	561612	BLW	EET CAN	02/10/23 10:30

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Client Sample ID: WC-05/2023-02-09/

Lab Sample ID: 240-180173-5

Date Collected: 02/09/23 18:40

Matrix: Water

Date Received: 02/10/23 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	561656	SAM	EET CAN	02/10/23 19:17
Total/NA	Analysis	8260D		1000	561615	SAM	EET CAN	02/10/23 16:21
Total/NA	Analysis	8260D		5000	561615	SAM	EET CAN	02/10/23 19:07
Total/NA	Prep	3510C LVI			561604	MDH	EET CAN	02/10/23 08:46
Total/NA	Analysis	8270E		20	561702	TMH	EET CAN	02/11/23 07:29
Total/NA	Prep	3511			561603	LKG	EET CAN	02/10/23 08:41
Total/NA	Analysis	8015D		1	561536	EPF	EET CAN	02/10/23 11:27
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	3010A			561653	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	6010D		1	561721	KLC	EET CAN	02/11/23 09:53
TCLP	Leach	1311			561562	KLE	EET CAN	02/10/23 09:00 - 02/10/23 09:00 ¹
TCLP	Prep	7470A			561655	MRL	EET CAN	02/10/23 14:00
TCLP	Analysis	7470A		1	561714	AJC	EET CAN	02/10/23 16:34
Total/NA	Analysis	1010B		1	561674	JWW	EET CAN	02/10/23 16:12
Total/NA	Analysis	2540D-2015		1	561611	MED	EET CAN	02/10/23 09:07
Total/NA	Analysis	5310 C-2014		20	561717	JMB	EET CAN	02/10/23 17:36
Total/NA	Analysis	9040C		1	561612	BLW	EET CAN	02/10/23 10:43

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-180173-6

Date Collected: 02/09/23 00:00

Matrix: Water

Date Received: 02/10/23 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	561615	SAM	EET CAN	02/10/23 14:47

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Chain of Custody Record



Client Information		Lab PM: DelMonico, Michael	Carrier Tracking No(s): 240-104718-37543.1					
Client Contact: Carolynn Grogan		E-Mail: Michael.DelMonico@eurofins.com	Page: Page 1 of 1					
Company: ARCADIS U.S., Inc.		PWSID: OH	Job #:					
Address: 7575 Huntington Park Drive Suite 130		Analysis Requested						
City: Columbus	State: OH, Zip: 43235	8015D_DRO - Diesel Range Organics [C10-C28]	Preservation Codes: M - Hexane N - None O - ASNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify) Other:					
Due Date Requested:	TAT Requested (days): 1-day	5310C - TOC						
Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Purchase Order not required	2540D - Solids, Total Suspended (TSS)						
PO #: 304-396-9424	Project #: 24030745	9040C - pH						
WO #: 115 East Palestine, OH	SSOW#: East Palestine, OH	1010A - Flashpoint						
Email: carolynn.grogan@arcadis.com		6010D, 7470A						
Project Name: 115 East Palestine, OH		8270E - OLM03, 1/4, 2 Semivolatile Analyte List						
Site: East Palestine, OH		8260D - TCL OLM03, 1/4, 2 Volatile Analyte List						
		Perform MS/MSD (Yes or No)						
		Field Filtered Sample (Yes or No)						
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, BT=Trizma, AA=)	Preservation Code:	Total Number of containers	Special Instructions (Note):	
WC-01/2023-02-09/	2/9/23	1550	G	Water		15		
WC-02/2023-02-09/	2/9/23	1630	G	Water		15		
WC-03/2023-02-09/	2/9/23	1820	G	Water		15		
WC-04/2023-02-09/	2/9/23	1830	G	Water		15		
WC-05/2023-02-09/	2/9/23	1840	G	Water		15		
 240-180173 Chain of Custody								
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological								
Deliverable Requested: I, II, III, IV, Other (specify)								
Empty Kit Relinquished by:								
Relinquished by: <i>Adam Swenson / Arcadis</i>		Date: 2/9/23 / 1910	Company: Arcadis		Received by: <i>Dee Lee</i>			Date/Time: 2-9-23 1900
Relinquished by: <i>Dee Lee</i>		Date: 2-9-23 2045	Company: Arcadis		Received by: <i>Adam Swenson / Arcadis</i>			Date/Time: 2-10-23 0700
Relinquished by:		Date/Time:	Company:		Received by:			Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:				
Sample: <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For 2 Months								
Special Instructions/QC Requirements:								



Barberton Facility

Client Arcadis Site Name _____

Cooler unpacked by: JWR

Cooler Received on 2-10-23 Opened on 2-10-23

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
 - IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 - IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No
 - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 - Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

If yes, Questions 13-17 have been checked at the originating laboratory.

- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203064-291590
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 01042010 Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

A TB was included but is not on the COC, logged last. JWR 2-10-23

Sample coolers were stored in cold storage and on ice overnight JWR 2-10-23

19. SAMPLE CONDITION

- Sample(s) _____ were received after the recommended holding time had expired.
- Sample(s) _____ were received in a broken container.
- Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 2/28/2023 2:55:01 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180852-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/28/2023 2:55:01 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	23
QC Sample Results	24
QC Association Summary	36
Lab Chronicle	38
Certification Summary	40
Chain of Custody	41

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Job ID: 240-180852-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180852-1

Comments

No additional comments.

Receipt

The samples were received on 2/24/2023 1:19 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The RL's for Benzaldehyde and Hexachlorobenzene are below the low point of the calibration. The RL's are supported by the MDL.

WC-257225-PLEASANT (240-180852-1), WC-251068-BLUE BLDG EAST (240-180852-2) and WC-257516- GAS STATION (240-180852-3)

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-563439 recovered above the upper control limit for Atrazine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-257225-PLEASANT (240-180852-1), WC-251068-BLUE BLDG EAST (240-180852-2) and WC-257516- GAS STATION (240-180852-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-563384 and 240-563384.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1010B	Ignitability, Pensky-Martens Closed-Cup Method	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C LVI	Liquid-Liquid Extraction (Separatory Funnel) LVI	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180852-1	WC-257225-PLEASANT	Water	02/23/23 17:58	02/24/23 13:19
240-180852-2	WC-251068-BLUE BLDG EAST	Water	02/23/23 17:40	02/24/23 13:19
240-180852-3	WC-257516- GAS STATION	Water	02/23/23 17:45	02/24/23 13:19
240-180852-4	NS-TB022323	Water	02/23/23 00:00	02/24/23 13:19

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0019	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.011		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00067	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0037		0.0010	0.00045	mg/L	1		8260D	Total/NA
Barium	0.035	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Mercury	0.00023	J	0.0020	0.00013	mg/L	1		7470A	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.0066	J	0.010	0.0054	mg/L	1		8260D	Total/NA
Toluene	0.00065	J	0.0010	0.00044	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0035		0.0020	0.00042	mg/L	1		8260D	Total/NA
Barium	0.061	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Mercury	0.00013	J	0.0020	0.00013	mg/L	1		7470A	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.00095	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Toluene	0.0017		0.0010	0.00044	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0081		0.0020	0.00042	mg/L	1		8260D	Total/NA
Barium	0.036	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00020	J	0.050	0.00020	mg/L	1		6010D	TCLP
Mercury	0.00013	J	0.0020	0.00013	mg/L	1		7470A	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA

Client Sample ID: NS-TB022323

Lab Sample ID: 240-180852-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Date Collected: 02/23/23 17:58

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 16:48	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/26/23 16:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/26/23 16:48	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 16:48	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/26/23 16:48	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/26/23 16:48	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/26/23 16:48	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/26/23 16:48	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/26/23 16:48	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/26/23 16:48	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/26/23 16:48	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/26/23 16:48	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/26/23 16:48	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/26/23 16:48	1
2-Butanone (MEK)	0.0019	J	0.010	0.0012	mg/L			02/26/23 16:48	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/26/23 16:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/26/23 16:48	1
Acetone	0.011		0.010	0.0054	mg/L			02/26/23 16:48	1
Benzene	0.00067	J	0.0010	0.00042	mg/L			02/26/23 16:48	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/26/23 16:48	1
Bromoform	ND		0.0010	0.00076	mg/L			02/26/23 16:48	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/26/23 16:48	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/26/23 16:48	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/26/23 16:48	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/26/23 16:48	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/26/23 16:48	1
Chloroform	ND		0.0010	0.00047	mg/L			02/26/23 16:48	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/26/23 16:48	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/26/23 16:48	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/26/23 16:48	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/26/23 16:48	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/26/23 16:48	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/26/23 16:48	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			02/26/23 16:48	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/26/23 16:48	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/26/23 16:48	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/26/23 16:48	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/26/23 16:48	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/26/23 16:48	1
Styrene	ND		0.0010	0.00045	mg/L			02/26/23 16:48	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/26/23 16:48	1
Toluene	ND		0.0010	0.00044	mg/L			02/26/23 16:48	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/26/23 16:48	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/26/23 16:48	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/26/23 16:48	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/26/23 16:48	1
Vinyl chloride	0.0037		0.0010	0.00045	mg/L			02/26/23 16:48	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			02/26/23 16:48	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Date Collected: 02/23/23 17:58

Matrix: Water

Date Received: 02/24/23 13:19

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		78 - 122		02/26/23 16:48	1
Toluene-d8 (Surr)	95		78 - 122		02/27/23 14:39	10
Dibromofluoromethane (Surr)	117		73 - 120		02/26/23 16:48	1
Dibromofluoromethane (Surr)	104		73 - 120		02/27/23 14:39	10
4-Bromofluorobenzene (Surr)	117		56 - 136		02/26/23 16:48	1
4-Bromofluorobenzene (Surr)	94		56 - 136		02/27/23 14:39	10
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		02/26/23 16:48	1
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		02/27/23 14:39	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:03	2500
bis (2-chloroisopropyl) ether	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4,5-Trichlorophenol	ND		13	5.0	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4,6-Trichlorophenol	ND		13	4.5	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4-Dichlorophenol	ND		5.0	0.66	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4-Dimethylphenol	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4-Dinitrophenol	ND		25	16	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,4-Dinitrotoluene	ND		13	5.2	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2,6-Dinitrotoluene	ND		13	5.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Chloronaphthalene	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Chlorophenol	ND		2.5	0.68	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Methylnaphthalene	ND		0.50	0.28	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Methylphenol	ND		2.5	0.52	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Nitroaniline	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
2-Nitrophenol	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
3,3'-Dichlorobenzidine	ND		13	2.9	mg/L		02/24/23 17:45	02/26/23 09:03	2500
3-Nitroaniline	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4,6-Dinitro-2-methylphenol	ND		13	7.1	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Bromophenyl phenyl ether	ND		5.0	1.2	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Chloro-3-methylphenol	ND		5.0	0.74	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Chloroaniline	ND		5.0	0.79	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Chlorophenyl phenyl ether	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Nitroaniline	ND		5.0	2.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
4-Nitrophenol	ND		25	5.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Acenaphthene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Acenaphthylene	ND		0.50	0.31	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Acetophenone	ND		2.5	0.92	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Anthracene	ND		0.50	0.34	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Atrazine	ND		5.0	2.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzaldehyde	ND		5.0	1.9	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzo[a]anthracene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzo[a]pyrene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzo[b]fluoranthene	ND		0.50	0.39	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzo[g,h,i]perylene	ND		0.50	0.45	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Benzo[k]fluoranthene	ND		0.50	0.35	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Bis(2-chloroethoxy)methane	ND		2.5	1.1	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Bis(2-chloroethyl)ether	ND		2.5	1.0	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Bis(2-ethylhexyl) phthalate	ND		13	5.6	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Butyl benzyl phthalate	ND		5.0	1.7	mg/L		02/24/23 17:45	02/26/23 09:03	2500

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Date Collected: 02/23/23 17:58

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		13	2.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Carbazole	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Chrysene	ND		0.50	0.47	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Dibenz(a,h)anthracene	ND		0.50	0.38	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Dibenzofuran	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Diethyl phthalate	ND		13	9.5	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Dimethyl phthalate	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Di-n-butyl phthalate	ND		13	4.5	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Di-n-octyl phthalate	ND		5.0	2.1	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Fluoranthene	ND		0.50	0.40	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Fluorene	ND		0.50	0.42	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Hexachlorobenzene	ND		0.50	0.40	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Hexachlorobutadiene	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Hexachlorocyclopentadiene	ND		25	4.4	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Hexachloroethane	ND		2.5	0.99	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Indeno[1,2,3-cd]pyrene	ND		0.50	0.34	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Isophorone	ND		2.5	0.81	mg/L		02/24/23 17:45	02/26/23 09:03	2500
N-Nitrosodi-n-propylamine	ND		2.5	0.63	mg/L		02/24/23 17:45	02/26/23 09:03	2500
N-Nitrosodiphenylamine	ND		2.5	1.1	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Naphthalene	ND		0.50	0.27	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Nitrobenzene	ND		2.5	1.3	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Pentachlorophenol	ND		25	7.8	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Phenanthrene	ND		0.50	0.42	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Phenol	ND		2.5	0.32	mg/L		02/24/23 17:45	02/26/23 09:03	2500
Pyrene	ND		0.50	0.44	mg/L		02/24/23 17:45	02/26/23 09:03	2500
3 & 4 Methylphenol	ND		5.0	0.48	mg/L		02/24/23 17:45	02/26/23 09:03	2500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/24/23 17:45	02/26/23 09:03	2500
Phenol-d5 (Surr)	0	S1-	26 - 120	02/24/23 17:45	02/26/23 09:03	2500
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/24/23 17:45	02/26/23 09:03	2500
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/24/23 17:45	02/26/23 09:03	2500
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/24/23 17:45	02/26/23 09:03	2500
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/24/23 17:45	02/26/23 09:03	2500

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:29	1
Barium	0.035	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:29	1
Cadmium	0.00024	J	0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:29	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:29	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:29	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:29	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:29	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00023	J	0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:58	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Date Collected: 02/23/23 17:58

Matrix: Water

Date Received: 02/24/23 13:19

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/28/23 11:38	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Date Collected: 02/23/23 17:40

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 19:51	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/27/23 19:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/27/23 19:51	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 19:51	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/27/23 19:51	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/27/23 19:51	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/27/23 19:51	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/27/23 19:51	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/27/23 19:51	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/27/23 19:51	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/27/23 19:51	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/27/23 19:51	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/27/23 19:51	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/27/23 19:51	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			02/27/23 19:51	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/27/23 19:51	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/27/23 19:51	1
Acetone	0.0066	J	0.010	0.0054	mg/L			02/27/23 19:51	1
Benzene	ND		0.0010	0.00042	mg/L			02/27/23 19:51	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/27/23 19:51	1
Bromoform	ND		0.0010	0.00076	mg/L			02/27/23 19:51	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/27/23 19:51	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/27/23 19:51	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/27/23 19:51	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/27/23 19:51	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/27/23 19:51	1
Chloroform	ND		0.0010	0.00047	mg/L			02/27/23 19:51	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/27/23 19:51	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/27/23 19:51	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/27/23 19:51	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/27/23 19:51	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/27/23 19:51	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/27/23 19:51	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			02/27/23 19:51	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/27/23 19:51	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/27/23 19:51	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/27/23 19:51	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/27/23 19:51	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/27/23 19:51	1
Styrene	ND		0.0010	0.00045	mg/L			02/27/23 19:51	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/27/23 19:51	1
Toluene	0.00065	J	0.0010	0.00044	mg/L			02/27/23 19:51	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/27/23 19:51	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/27/23 19:51	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/27/23 19:51	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/27/23 19:51	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			02/27/23 19:51	1
Xylenes, Total	0.0035		0.0020	0.00042	mg/L			02/27/23 19:51	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Date Collected: 02/23/23 17:40

Matrix: Water

Date Received: 02/24/23 13:19

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		78 - 122		02/26/23 20:46	4
Toluene-d8 (Surr)	97		78 - 122		02/27/23 15:28	40
Toluene-d8 (Surr)	95		78 - 122		02/27/23 19:51	1
Dibromofluoromethane (Surr)	110		73 - 120		02/26/23 20:46	4
Dibromofluoromethane (Surr)	108		73 - 120		02/27/23 15:28	40
Dibromofluoromethane (Surr)	107		73 - 120		02/27/23 19:51	1
4-Bromofluorobenzene (Surr)	107		56 - 136		02/26/23 20:46	4
4-Bromofluorobenzene (Surr)	99		56 - 136		02/27/23 15:28	40
4-Bromofluorobenzene (Surr)	109		56 - 136		02/27/23 19:51	1
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		02/26/23 20:46	4
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		02/27/23 15:28	40
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		02/27/23 19:51	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:26	2500
bis (2-chloroisopropyl) ether	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4,5-Trichlorophenol	ND		13	5.0	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4,6-Trichlorophenol	ND		13	4.5	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4-Dichlorophenol	ND		5.0	0.66	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4-Dimethylphenol	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4-Dinitrophenol	ND		25	16	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,4-Dinitrotoluene	ND		13	5.2	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2,6-Dinitrotoluene	ND		13	5.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Chloronaphthalene	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Chlorophenol	ND		2.5	0.68	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Methylnaphthalene	ND		0.50	0.28	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Methylphenol	ND		2.5	0.52	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Nitroaniline	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
2-Nitrophenol	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
3,3'-Dichlorobenzidine	ND		13	2.9	mg/L		02/24/23 17:45	02/26/23 09:26	2500
3-Nitroaniline	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4,6-Dinitro-2-methylphenol	ND		13	7.1	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Bromophenyl phenyl ether	ND		5.0	1.2	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Chloro-3-methylphenol	ND		5.0	0.74	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Chloroaniline	ND		5.0	0.79	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Chlorophenyl phenyl ether	ND		5.0	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Nitroaniline	ND		5.0	2.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
4-Nitrophenol	ND		25	5.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Acenaphthene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Acenaphthylene	ND		0.50	0.31	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Acetophenone	ND		2.5	0.92	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Anthracene	ND		0.50	0.34	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Atrazine	ND		5.0	2.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzaldehyde	ND		5.0	1.9	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzo[a]anthracene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzo[a]pyrene	ND		0.50	0.43	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzo[b]fluoranthene	ND		0.50	0.39	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzo[g,h,i]perylene	ND		0.50	0.45	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Benzo[k]fluoranthene	ND		0.50	0.35	mg/L		02/24/23 17:45	02/26/23 09:26	2500

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Date Collected: 02/23/23 17:40

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		2.5	1.1	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Bis(2-chloroethyl)ether	ND		2.5	1.0	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Bis(2-ethylhexyl) phthalate	ND		13	5.6	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Butyl benzyl phthalate	ND		5.0	1.7	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Caprolactam	ND		13	2.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Carbazole	ND		2.5	1.2	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Chrysene	ND		0.50	0.47	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Dibenz(a,h)anthracene	ND		0.50	0.38	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Dibenzofuran	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Diethyl phthalate	ND		13	9.5	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Dimethyl phthalate	ND		5.0	1.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Di-n-butyl phthalate	ND		13	4.5	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Di-n-octyl phthalate	ND		5.0	2.1	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Fluoranthene	ND		0.50	0.40	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Fluorene	ND		0.50	0.42	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Hexachlorobenzene	ND		0.50	0.40	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Hexachlorobutadiene	ND		2.5	1.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Hexachlorocyclopentadiene	ND		25	4.4	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Hexachloroethane	ND		2.5	0.99	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Indeno[1,2,3-cd]pyrene	ND		0.50	0.34	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Isophorone	ND		2.5	0.81	mg/L		02/24/23 17:45	02/26/23 09:26	2500
N-Nitrosodi-n-propylamine	ND		2.5	0.63	mg/L		02/24/23 17:45	02/26/23 09:26	2500
N-Nitrosodiphenylamine	ND		2.5	1.1	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Naphthalene	ND		0.50	0.27	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Nitrobenzene	ND		2.5	1.3	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Pentachlorophenol	ND		25	7.8	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Phenanthrene	ND		0.50	0.42	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Phenol	ND		2.5	0.32	mg/L		02/24/23 17:45	02/26/23 09:26	2500
Pyrene	ND		0.50	0.44	mg/L		02/24/23 17:45	02/26/23 09:26	2500
3 & 4 Methylphenol	ND		5.0	0.48	mg/L		02/24/23 17:45	02/26/23 09:26	2500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	02/24/23 17:45	02/26/23 09:26	2500
Phenol-d5 (Surr)	0	S1-	26 - 120	02/24/23 17:45	02/26/23 09:26	2500
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	02/24/23 17:45	02/26/23 09:26	2500
2-Fluorophenol (Surr)	0	S1-	19 - 120	02/24/23 17:45	02/26/23 09:26	2500
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	02/24/23 17:45	02/26/23 09:26	2500
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	02/24/23 17:45	02/26/23 09:26	2500

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:33	1
Barium	0.061	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:33	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:33	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:33	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:33	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:33	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:33	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Date Collected: 02/23/23 17:40

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 18:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/28/23 12:15	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 20:38	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/27/23 20:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/27/23 20:38	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 20:38	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/27/23 20:38	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/27/23 20:38	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/27/23 20:38	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/27/23 20:38	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/27/23 20:38	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/27/23 20:38	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/27/23 20:38	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/27/23 20:38	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/27/23 20:38	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/27/23 20:38	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			02/27/23 20:38	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/27/23 20:38	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/27/23 20:38	1
Acetone	ND		0.010	0.0054	mg/L			02/27/23 20:38	1
Benzene	ND		0.0010	0.00042	mg/L			02/27/23 20:38	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/27/23 20:38	1
Bromoform	ND		0.0010	0.00076	mg/L			02/27/23 20:38	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/27/23 20:38	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/27/23 20:38	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/27/23 20:38	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/27/23 20:38	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/27/23 20:38	1
Chloroform	ND		0.0010	0.00047	mg/L			02/27/23 20:38	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/27/23 20:38	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/27/23 20:38	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/27/23 20:38	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/27/23 20:38	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/27/23 20:38	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/27/23 20:38	1
Ethylbenzene	0.00095	J	0.0010	0.00042	mg/L			02/27/23 20:38	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/27/23 20:38	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/27/23 20:38	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/27/23 20:38	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/27/23 20:38	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/27/23 20:38	1
Styrene	ND		0.0010	0.00045	mg/L			02/27/23 20:38	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/27/23 20:38	1
Toluene	0.0017		0.0010	0.00044	mg/L			02/27/23 20:38	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/27/23 20:38	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/27/23 20:38	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/27/23 20:38	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/27/23 20:38	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			02/27/23 20:38	1
Xylenes, Total	0.0081		0.0020	0.00042	mg/L			02/27/23 20:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		78 - 122		02/26/23 21:09	4
Toluene-d8 (Surr)	96		78 - 122		02/27/23 15:04	20
Toluene-d8 (Surr)	95		78 - 122		02/27/23 20:38	1
Dibromofluoromethane (Surr)	113		73 - 120		02/26/23 21:09	4
Dibromofluoromethane (Surr)	107		73 - 120		02/27/23 15:04	20
Dibromofluoromethane (Surr)	105		73 - 120		02/27/23 20:38	1
4-Bromofluorobenzene (Surr)	103		56 - 136		02/26/23 21:09	4
4-Bromofluorobenzene (Surr)	99		56 - 136		02/27/23 15:04	20
4-Bromofluorobenzene (Surr)	104		56 - 136		02/27/23 20:38	1
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		02/26/23 21:09	4
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		02/27/23 15:04	20
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		02/27/23 20:38	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.020	0.0098	mg/L		02/24/23 17:46	02/26/23 09:50	20
bis (2-chloroisopropyl) ether	ND		0.020	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4,5-Trichlorophenol	ND		0.10	0.040	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4,6-Trichlorophenol	ND		0.10	0.036	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4-Dichlorophenol	ND		0.040	0.0052	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4-Dimethylphenol	ND		0.040	0.010	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4-Dinitrophenol	ND		0.20	0.12	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,4-Dinitrotoluene	ND		0.10	0.041	mg/L		02/24/23 17:46	02/26/23 09:50	20
2,6-Dinitrotoluene	ND		0.10	0.043	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Chloronaphthalene	ND		0.020	0.0097	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Chlorophenol	ND		0.020	0.0055	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Methylnaphthalene	ND		0.0040	0.0022	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Methylphenol	ND		0.020	0.0042	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Nitroaniline	ND		0.040	0.010	mg/L		02/24/23 17:46	02/26/23 09:50	20
2-Nitrophenol	ND		0.040	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
3,3'-Dichlorobenzidine	ND		0.10	0.023	mg/L		02/24/23 17:46	02/26/23 09:50	20
3-Nitroaniline	ND		0.040	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
4,6-Dinitro-2-methylphenol	ND		0.10	0.056	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Bromophenyl phenyl ether	ND		0.040	0.010	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Chloro-3-methylphenol	ND		0.040	0.0059	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Chloroaniline	ND		0.040	0.0063	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Chlorophenyl phenyl ether	ND		0.040	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Nitroaniline	ND		0.040	0.018	mg/L		02/24/23 17:46	02/26/23 09:50	20
4-Nitrophenol	ND		0.20	0.043	mg/L		02/24/23 17:46	02/26/23 09:50	20
Acenaphthene	ND		0.0040	0.0034	mg/L		02/24/23 17:46	02/26/23 09:50	20
Acenaphthylene	ND		0.0040	0.0025	mg/L		02/24/23 17:46	02/26/23 09:50	20
Acetophenone	ND		0.020	0.0073	mg/L		02/24/23 17:46	02/26/23 09:50	20
Anthracene	ND		0.0040	0.0027	mg/L		02/24/23 17:46	02/26/23 09:50	20
Atrazine	ND		0.040	0.019	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzaldehyde	ND		0.040	0.015	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzo[a]anthracene	ND		0.0040	0.0034	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzo[a]pyrene	ND		0.0040	0.0035	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzo[b]fluoranthene	ND		0.0040	0.0031	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzo[g,h,i]perylene	ND		0.0040	0.0036	mg/L		02/24/23 17:46	02/26/23 09:50	20
Benzo[k]fluoranthene	ND		0.0040	0.0028	mg/L		02/24/23 17:46	02/26/23 09:50	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.020	0.0091	mg/L		02/24/23 17:46	02/26/23 09:50	20
Bis(2-chloroethyl)ether	ND		0.020	0.0080	mg/L		02/24/23 17:46	02/26/23 09:50	20
Bis(2-ethylhexyl) phthalate	ND		0.10	0.044	mg/L		02/24/23 17:46	02/26/23 09:50	20
Butyl benzyl phthalate	ND		0.040	0.013	mg/L		02/24/23 17:46	02/26/23 09:50	20
Caprolactam	ND		0.10	0.019	mg/L		02/24/23 17:46	02/26/23 09:50	20
Carbazole	ND		0.020	0.0098	mg/L		02/24/23 17:46	02/26/23 09:50	20
Chrysene	ND		0.0040	0.0037	mg/L		02/24/23 17:46	02/26/23 09:50	20
Dibenz(a,h)anthracene	ND		0.0040	0.0030	mg/L		02/24/23 17:46	02/26/23 09:50	20
Dibenzofuran	ND		0.020	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
Diethyl phthalate	ND		0.10	0.076	mg/L		02/24/23 17:46	02/26/23 09:50	20
Dimethyl phthalate	ND		0.040	0.010	mg/L		02/24/23 17:46	02/26/23 09:50	20
Di-n-butyl phthalate	ND		0.10	0.036	mg/L		02/24/23 17:46	02/26/23 09:50	20
Di-n-octyl phthalate	ND		0.040	0.016	mg/L		02/24/23 17:46	02/26/23 09:50	20
Fluoranthene	ND		0.0040	0.0032	mg/L		02/24/23 17:46	02/26/23 09:50	20
Fluorene	ND		0.0040	0.0034	mg/L		02/24/23 17:46	02/26/23 09:50	20
Hexachlorobenzene	ND		0.0040	0.0032	mg/L		02/24/23 17:46	02/26/23 09:50	20
Hexachlorobutadiene	ND		0.020	0.011	mg/L		02/24/23 17:46	02/26/23 09:50	20
Hexachlorocyclopentadiene	ND		0.20	0.035	mg/L		02/24/23 17:46	02/26/23 09:50	20
Hexachloroethane	ND		0.020	0.0079	mg/L		02/24/23 17:46	02/26/23 09:50	20
Indeno[1,2,3-cd]pyrene	ND		0.0040	0.0027	mg/L		02/24/23 17:46	02/26/23 09:50	20
Isophorone	ND		0.020	0.0065	mg/L		02/24/23 17:46	02/26/23 09:50	20
N-Nitrosodi-n-propylamine	ND		0.020	0.0051	mg/L		02/24/23 17:46	02/26/23 09:50	20
N-Nitrosodiphenylamine	ND		0.020	0.0088	mg/L		02/24/23 17:46	02/26/23 09:50	20
Naphthalene	ND		0.0040	0.0022	mg/L		02/24/23 17:46	02/26/23 09:50	20
Nitrobenzene	ND		0.020	0.010	mg/L		02/24/23 17:46	02/26/23 09:50	20
Pentachlorophenol	ND		0.20	0.062	mg/L		02/24/23 17:46	02/26/23 09:50	20
Phenanthrene	ND		0.0040	0.0033	mg/L		02/24/23 17:46	02/26/23 09:50	20
Phenol	ND		0.020	0.0026	mg/L		02/24/23 17:46	02/26/23 09:50	20
Pyrene	ND		0.0040	0.0035	mg/L		02/24/23 17:46	02/26/23 09:50	20
3 & 4 Methylphenol	ND		0.040	0.0038	mg/L		02/24/23 17:46	02/26/23 09:50	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	39	S1-	46 - 137	02/24/23 17:46	02/26/23 09:50	20
Phenol-d5 (Surr)	61		26 - 120	02/24/23 17:46	02/26/23 09:50	20
Nitrobenzene-d5 (Surr)	39		24 - 120	02/24/23 17:46	02/26/23 09:50	20
2-Fluorophenol (Surr)	49		19 - 120	02/24/23 17:46	02/26/23 09:50	20
2-Fluorobiphenyl (Surr)	79		33 - 120	02/24/23 17:46	02/26/23 09:50	20
2,4,6-Tribromophenol (Surr)	63		10 - 120	02/24/23 17:46	02/26/23 09:50	20

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 11:38	1
Barium	0.036	J B	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 11:38	1
Cadmium	0.00020	J	0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 11:38	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 11:38	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 11:38	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 11:38	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 11:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			02/28/23 12:34	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: NS-TB022323

Lab Sample ID: 240-180852-4

Date Collected: 02/23/23 00:00

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 14:26	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/26/23 14:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/26/23 14:26	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 14:26	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/26/23 14:26	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/26/23 14:26	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/26/23 14:26	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/26/23 14:26	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/26/23 14:26	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/26/23 14:26	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/26/23 14:26	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/26/23 14:26	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/26/23 14:26	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/26/23 14:26	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			02/26/23 14:26	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/26/23 14:26	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/26/23 14:26	1
Acetone	ND		0.010	0.0054	mg/L			02/26/23 14:26	1
Benzene	ND		0.0010	0.00042	mg/L			02/26/23 14:26	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/26/23 14:26	1
Bromoform	ND		0.0010	0.00076	mg/L			02/26/23 14:26	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/26/23 14:26	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/26/23 14:26	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/26/23 14:26	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/26/23 14:26	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/26/23 14:26	1
Chloroform	ND		0.0010	0.00047	mg/L			02/26/23 14:26	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/26/23 14:26	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/26/23 14:26	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/26/23 14:26	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/26/23 14:26	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/26/23 14:26	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/26/23 14:26	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			02/26/23 14:26	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/26/23 14:26	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/26/23 14:26	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/26/23 14:26	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/26/23 14:26	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/26/23 14:26	1
Styrene	ND		0.0010	0.00045	mg/L			02/26/23 14:26	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/26/23 14:26	1
Toluene	ND		0.0010	0.00044	mg/L			02/26/23 14:26	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/26/23 14:26	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/26/23 14:26	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/26/23 14:26	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/26/23 14:26	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			02/26/23 14:26	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			02/26/23 14:26	1
Butyl acrylate	ND		0.010	0.0023	mg/L			02/26/23 14:26	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: NS-TB022323

Lab Sample ID: 240-180852-4

Date Collected: 02/23/23 00:00

Matrix: Water

Date Received: 02/24/23 13:19

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			02/26/23 14:26	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			02/26/23 14:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	102		78 - 122		02/26/23 14:26	1
<i>Dibromofluoromethane (Surr)</i>	117		73 - 120		02/26/23 14:26	1
<i>4-Bromofluorobenzene (Surr)</i>	98		56 - 136		02/26/23 14:26	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	111		62 - 137		02/26/23 14:26	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-180852-1	WC-257225-PLEASANT	104	117	117	106
240-180852-1	WC-257225-PLEASANT	95	104	94	96
240-180852-2	WC-251068-BLUE BLDG EAST	98	110	107	103
240-180852-2	WC-251068-BLUE BLDG EAST	97	108	99	101
240-180852-2	WC-251068-BLUE BLDG EAST	95	107	109	98
240-180852-3	WC-257516- GAS STATION	95	113	103	108
240-180852-3	WC-257516- GAS STATION	96	107	99	100
240-180852-3	WC-257516- GAS STATION	95	105	104	98
240-180852-3 MS	WC-257516- GAS STATION	98	100	100	93
240-180852-3 MSD	WC-257516- GAS STATION	97	101	100	92
240-180852-4	NS-TB022323	102	117	98	111
LCS 240-563444/5	Lab Control Sample	108	107	107	101
LCS 240-563444/6	Lab Control Sample	99	108	104	102
LCS 240-563547/5	Lab Control Sample	102	101	102	94
LCS 240-563547/6	Lab Control Sample	95	101	99	94
MB 240-563444/8	Method Blank	100	114	96	108
MB 240-563547/8	Method Blank	95	109	93	102

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-180852-1	WC-257225-PLEASANT	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180852-2	WC-251068-BLUE BLDG EAST	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-180852-3	WC-257516- GAS STATION	39 S1-	61	39	49	79	63
LCS 240-563384/2-A	Lab Control Sample	95	80	79	94	80	81
LCS 240-563384/3-A	Lab Control Sample	113	66	78	58	85	83
MB 240-563384/1-A	Method Blank	106	54	72	51	78	69

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-563444/8
Matrix: Water
Analysis Batch: 563444

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 13:15	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/26/23 13:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/26/23 13:15	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/26/23 13:15	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/26/23 13:15	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/26/23 13:15	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/26/23 13:15	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/26/23 13:15	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/26/23 13:15	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/26/23 13:15	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/26/23 13:15	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/26/23 13:15	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/26/23 13:15	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/26/23 13:15	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			02/26/23 13:15	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/26/23 13:15	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/26/23 13:15	1
Acetone	ND		0.010	0.0054	mg/L			02/26/23 13:15	1
Benzene	ND		0.0010	0.00042	mg/L			02/26/23 13:15	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/26/23 13:15	1
Bromoform	ND		0.0010	0.00076	mg/L			02/26/23 13:15	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/26/23 13:15	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/26/23 13:15	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/26/23 13:15	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/26/23 13:15	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/26/23 13:15	1
Chloroform	ND		0.0010	0.00047	mg/L			02/26/23 13:15	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/26/23 13:15	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/26/23 13:15	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/26/23 13:15	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/26/23 13:15	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/26/23 13:15	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/26/23 13:15	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			02/26/23 13:15	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/26/23 13:15	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/26/23 13:15	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/26/23 13:15	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/26/23 13:15	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/26/23 13:15	1
Styrene	ND		0.0010	0.00045	mg/L			02/26/23 13:15	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/26/23 13:15	1
Toluene	ND		0.0010	0.00044	mg/L			02/26/23 13:15	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/26/23 13:15	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/26/23 13:15	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/26/23 13:15	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/26/23 13:15	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			02/26/23 13:15	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			02/26/23 13:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563444/8
Matrix: Water
Analysis Batch: 563444

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl acrylate	ND		0.010	0.0023	mg/L			02/26/23 13:15	1
Methyl acrylate	ND		0.0020	0.00062	mg/L			02/26/23 13:15	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			02/26/23 13:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		78 - 122		02/26/23 13:15	1
Dibromofluoromethane (Surr)	114		73 - 120		02/26/23 13:15	1
4-Bromofluorobenzene (Surr)	96		56 - 136		02/26/23 13:15	1
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		02/26/23 13:15	1

Lab Sample ID: LCS 240-563444/5
Matrix: Water
Analysis Batch: 563444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0259		mg/L		104	64 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0282		mg/L		113	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0270		mg/L		108	51 - 146
1,1,2-Trichloroethane	0.0250	0.0265		mg/L		106	70 - 138
1,1-Dichloroethane	0.0250	0.0248		mg/L		99	72 - 127
1,1-Dichloroethene	0.0250	0.0267		mg/L		107	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0279		mg/L		112	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0256		mg/L		103	53 - 135
Ethylene Dibromide	0.0250	0.0263		mg/L		105	71 - 134
1,2-Dichlorobenzene	0.0250	0.0269		mg/L		108	78 - 120
1,2-Dichloroethane	0.0250	0.0252		mg/L		101	66 - 128
1,2-Dichloropropane	0.0250	0.0255		mg/L		102	75 - 133
1,3-Dichlorobenzene	0.0250	0.0269		mg/L		107	80 - 120
1,4-Dichlorobenzene	0.0250	0.0265		mg/L		106	80 - 120
2-Butanone (MEK)	0.0500	0.0534		mg/L		107	54 - 156
2-Hexanone	0.0500	0.0582		mg/L		116	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0588		mg/L		118	46 - 158
Acetone	0.0500	0.0550		mg/L		110	50 - 149
Benzene	0.0250	0.0262		mg/L		105	77 - 123
Dichlorobromomethane	0.0250	0.0252		mg/L		101	69 - 126
Bromoform	0.0250	0.0264		mg/L		106	57 - 129
Bromomethane	0.0125	0.0157		mg/L		126	36 - 142
Carbon disulfide	0.0250	0.0265		mg/L		106	43 - 140
Carbon tetrachloride	0.0250	0.0257		mg/L		103	55 - 137
Chlorobenzene	0.0250	0.0264		mg/L		105	80 - 121
Chloroethane	0.0125	0.0127		mg/L		101	38 - 152
Chloroform	0.0250	0.0253		mg/L		101	74 - 122
Chloromethane	0.0125	0.0151		mg/L		121	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0253		mg/L		101	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0254		mg/L		101	64 - 130
Cyclohexane	0.0250	0.0278		mg/L		111	58 - 146
Chlorodibromomethane	0.0250	0.0255		mg/L		102	70 - 124
Dichlorodifluoromethane	0.0125	0.0148		mg/L		118	34 - 153

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563444/5
Matrix: Water
Analysis Batch: 563444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0250	0.0269		mg/L		108	80 - 121
Isopropylbenzene	0.0250	0.0280		mg/L		112	74 - 128
Methyl acetate	0.0500	0.0458		mg/L		92	42 - 169
Methyl tert-butyl ether	0.0250	0.0257		mg/L		103	65 - 126
Methylcyclohexane	0.0250	0.0289		mg/L		116	62 - 136
Methylene Chloride	0.0250	0.0265		mg/L		106	71 - 125
Styrene	0.0250	0.0280		mg/L		112	80 - 135
Tetrachloroethene	0.0250	0.0274		mg/L		109	76 - 123
Toluene	0.0250	0.0266		mg/L		106	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0259		mg/L		104	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0262		mg/L		105	57 - 129
Trichloroethene	0.0250	0.0258		mg/L		103	70 - 122
Trichlorofluoromethane	0.0125	0.0129		mg/L		103	30 - 170
Vinyl chloride	0.0125	0.0140		mg/L		112	60 - 144
Xylenes, Total	0.0500	0.0538		mg/L		108	80 - 121
m-Xylene & p-Xylene	0.0250	0.0271		mg/L		109	80 - 120
o-Xylene	0.0250	0.0267		mg/L		107	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	107		73 - 120
4-Bromofluorobenzene (Surr)	107		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: LCS 240-563444/6
Matrix: Water
Analysis Batch: 563444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	0.0250	0.0231		mg/L		93	10 - 120
Methyl acrylate	0.0250	0.0256		mg/L		102	10 - 120
2-Ethylhexyl acrylate	0.0250	0.0204		mg/L		82	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	108		73 - 120
4-Bromofluorobenzene (Surr)	104		56 - 136
1,2-Dichloroethane-d4 (Surr)	102		62 - 137

Lab Sample ID: 240-180852-3 MS
Matrix: Water
Analysis Batch: 563444

Client Sample ID: WC-257516- GAS STATION
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2-Ethylhexyl acrylate	0.066		0.100	0.133		mg/L		68	10 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	98		78 - 122

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-180852-3 MS
Matrix: Water
Analysis Batch: 563444

Client Sample ID: WC-257516- GAS STATION
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	100		73 - 120
4-Bromofluorobenzene (Surr)	100		56 - 136
1,2-Dichloroethane-d4 (Surr)	93		62 - 137

Lab Sample ID: 240-180852-3 MSD
Matrix: Water
Analysis Batch: 563444

Client Sample ID: WC-257516- GAS STATION
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Ethylhexyl acrylate	0.066		0.100	0.140		mg/L		74	10 - 120	5	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120
4-Bromofluorobenzene (Surr)	100		56 - 136
1,2-Dichloroethane-d4 (Surr)	92		62 - 137

Lab Sample ID: MB 240-563547/8
Matrix: Water
Analysis Batch: 563547

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 13:51	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			02/27/23 13:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			02/27/23 13:51	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			02/27/23 13:51	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			02/27/23 13:51	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			02/27/23 13:51	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			02/27/23 13:51	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			02/27/23 13:51	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			02/27/23 13:51	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			02/27/23 13:51	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			02/27/23 13:51	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			02/27/23 13:51	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			02/27/23 13:51	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			02/27/23 13:51	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			02/27/23 13:51	1
2-Hexanone	ND		0.010	0.0011	mg/L			02/27/23 13:51	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			02/27/23 13:51	1
Acetone	ND		0.010	0.0054	mg/L			02/27/23 13:51	1
Benzene	ND		0.0010	0.00042	mg/L			02/27/23 13:51	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			02/27/23 13:51	1
Bromoform	ND		0.0010	0.00076	mg/L			02/27/23 13:51	1
Bromomethane	ND		0.0010	0.00042	mg/L			02/27/23 13:51	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			02/27/23 13:51	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			02/27/23 13:51	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			02/27/23 13:51	1
Chloroethane	ND		0.0010	0.00083	mg/L			02/27/23 13:51	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-563547/8
Matrix: Water
Analysis Batch: 563547

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.0010	0.00047	mg/L			02/27/23 13:51	1
Chloromethane	ND		0.0010	0.00063	mg/L			02/27/23 13:51	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			02/27/23 13:51	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			02/27/23 13:51	1
Cyclohexane	ND		0.0010	0.00048	mg/L			02/27/23 13:51	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			02/27/23 13:51	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			02/27/23 13:51	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			02/27/23 13:51	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			02/27/23 13:51	1
Methyl acetate	ND		0.010	0.0017	mg/L			02/27/23 13:51	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			02/27/23 13:51	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			02/27/23 13:51	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			02/27/23 13:51	1
Styrene	ND		0.0010	0.00045	mg/L			02/27/23 13:51	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			02/27/23 13:51	1
Toluene	ND		0.0010	0.00044	mg/L			02/27/23 13:51	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			02/27/23 13:51	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			02/27/23 13:51	1
Trichloroethene	ND		0.0010	0.00044	mg/L			02/27/23 13:51	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			02/27/23 13:51	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			02/27/23 13:51	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			02/27/23 13:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	95		78 - 122		02/27/23 13:51	1
<i>Dibromofluoromethane (Surr)</i>	109		73 - 120		02/27/23 13:51	1
<i>4-Bromofluorobenzene (Surr)</i>	93		56 - 136		02/27/23 13:51	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		62 - 137		02/27/23 13:51	1

Lab Sample ID: LCS 240-563547/5
Matrix: Water
Analysis Batch: 563547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0256		mg/L		102	64 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0273		mg/L		109	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0278		mg/L		111	51 - 146
1,1,2-Trichloroethane	0.0250	0.0261		mg/L		104	70 - 138
1,1-Dichloroethane	0.0250	0.0245		mg/L		98	72 - 127
1,1-Dichloroethene	0.0250	0.0264		mg/L		106	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0277		mg/L		111	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0250		mg/L		100	53 - 135
Ethylene Dibromide	0.0250	0.0257		mg/L		103	71 - 134
1,2-Dichlorobenzene	0.0250	0.0267		mg/L		107	78 - 120
1,2-Dichloroethane	0.0250	0.0248		mg/L		99	66 - 128
1,2-Dichloropropane	0.0250	0.0254		mg/L		102	75 - 133
1,3-Dichlorobenzene	0.0250	0.0263		mg/L		105	80 - 120
1,4-Dichlorobenzene	0.0250	0.0260		mg/L		104	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563547/5
Matrix: Water
Analysis Batch: 563547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	0.0500	0.0502		mg/L		100	54 - 156
2-Hexanone	0.0500	0.0571		mg/L		114	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0573		mg/L		115	46 - 158
Acetone	0.0500	0.0511		mg/L		102	50 - 149
Benzene	0.0250	0.0260		mg/L		104	77 - 123
Dichlorobromomethane	0.0250	0.0247		mg/L		99	69 - 126
Bromoform	0.0250	0.0261		mg/L		104	57 - 129
Bromomethane	0.0125	0.0158		mg/L		126	36 - 142
Carbon disulfide	0.0250	0.0258		mg/L		103	43 - 140
Carbon tetrachloride	0.0250	0.0258		mg/L		103	55 - 137
Chlorobenzene	0.0250	0.0260		mg/L		104	80 - 121
Chloroethane	0.0125	0.0122		mg/L		97	38 - 152
Chloroform	0.0250	0.0247		mg/L		99	74 - 122
Chloromethane	0.0125	0.0147		mg/L		117	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0253		mg/L		101	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0253		mg/L		101	64 - 130
Cyclohexane	0.0250	0.0288		mg/L		115	58 - 146
Chlorodibromomethane	0.0250	0.0255		mg/L		102	70 - 124
Dichlorodifluoromethane	0.0125	0.0140		mg/L		112	34 - 153
Ethylbenzene	0.0250	0.0267		mg/L		107	80 - 121
Isopropylbenzene	0.0250	0.0277		mg/L		111	74 - 128
Methyl acetate	0.0500	0.0443		mg/L		89	42 - 169
Methyl tert-butyl ether	0.0250	0.0253		mg/L		101	65 - 126
Methylcyclohexane	0.0250	0.0298		mg/L		119	62 - 136
Methylene Chloride	0.0250	0.0265		mg/L		106	71 - 125
Styrene	0.0250	0.0277		mg/L		111	80 - 135
Tetrachloroethene	0.0250	0.0279		mg/L		112	76 - 123
Toluene	0.0250	0.0263		mg/L		105	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0256		mg/L		102	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0257		mg/L		103	57 - 129
Trichloroethene	0.0250	0.0255		mg/L		102	70 - 122
Trichlorofluoromethane	0.0125	0.0125		mg/L		100	30 - 170
Vinyl chloride	0.0125	0.0137		mg/L		110	60 - 144
Xylenes, Total	0.0500	0.0537		mg/L		107	80 - 121
m-Xylene & p-Xylene	0.0250	0.0271		mg/L		108	80 - 120
o-Xylene	0.0250	0.0266		mg/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120
4-Bromofluorobenzene (Surr)	102		56 - 136
1,2-Dichloroethane-d4 (Surr)	94		62 - 137

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-563547/6
Matrix: Water
Analysis Batch: 563547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120
4-Bromofluorobenzene (Surr)	99		56 - 136
1,2-Dichloroethane-d4 (Surr)	94		62 - 137

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563384/1-A
Matrix: Water
Analysis Batch: 563393

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563384

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.0010	0.00049	mg/L		02/24/23 17:45	02/25/23 07:18	1
bis (2-chloroisopropyl) ether	ND		0.0010	0.00055	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4,5-Trichlorophenol	ND		0.0050	0.0020	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4,6-Trichlorophenol	ND		0.0050	0.0018	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4-Dichlorophenol	ND		0.0020	0.00026	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4-Dimethylphenol	ND		0.0020	0.00052	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4-Dinitrophenol	ND		0.010	0.0062	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,4-Dinitrotoluene	ND		0.0050	0.0021	mg/L		02/24/23 17:45	02/25/23 07:18	1
2,6-Dinitrotoluene	ND		0.0050	0.0021	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Chloronaphthalene	ND		0.0010	0.00048	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Chlorophenol	ND		0.0010	0.00027	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Methylnaphthalene	ND		0.00020	0.00011	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Methylphenol	ND		0.0010	0.00021	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Nitroaniline	ND		0.0020	0.00051	mg/L		02/24/23 17:45	02/25/23 07:18	1
2-Nitrophenol	ND		0.0020	0.00056	mg/L		02/24/23 17:45	02/25/23 07:18	1
3,3'-Dichlorobenzidine	ND		0.0050	0.0012	mg/L		02/24/23 17:45	02/25/23 07:18	1
3-Nitroaniline	ND		0.0020	0.00057	mg/L		02/24/23 17:45	02/25/23 07:18	1
4,6-Dinitro-2-methylphenol	ND		0.0050	0.0028	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Bromophenyl phenyl ether	ND		0.0020	0.00050	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Chloro-3-methylphenol	ND		0.0020	0.00030	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Chloroaniline	ND		0.0020	0.00032	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Chlorophenyl phenyl ether	ND		0.0020	0.00055	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Nitroaniline	ND		0.0020	0.00092	mg/L		02/24/23 17:45	02/25/23 07:18	1
4-Nitrophenol	ND		0.010	0.0022	mg/L		02/24/23 17:45	02/25/23 07:18	1
Acenaphthene	ND		0.00020	0.00017	mg/L		02/24/23 17:45	02/25/23 07:18	1
Acenaphthylene	ND		0.00020	0.00013	mg/L		02/24/23 17:45	02/25/23 07:18	1
Acetophenone	ND		0.0010	0.00037	mg/L		02/24/23 17:45	02/25/23 07:18	1
Anthracene	ND		0.00020	0.00014	mg/L		02/24/23 17:45	02/25/23 07:18	1
Atrazine	ND		0.0020	0.00095	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzaldehyde	ND		0.0020	0.00076	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzo[a]anthracene	ND		0.00020	0.00017	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzo[a]pyrene	ND		0.00020	0.00017	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzo[b]fluoranthene	ND		0.00020	0.00015	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzo[g,h,i]perylene	ND		0.00020	0.00018	mg/L		02/24/23 17:45	02/25/23 07:18	1
Benzo[k]fluoranthene	ND		0.00020	0.00014	mg/L		02/24/23 17:45	02/25/23 07:18	1
Bis(2-chloroethoxy)methane	ND		0.0010	0.00046	mg/L		02/24/23 17:45	02/25/23 07:18	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563384/1-A
Matrix: Water
Analysis Batch: 563393

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563384

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	ND		0.0010	0.00040	mg/L		02/24/23 17:45	02/25/23 07:18	1
Bis(2-ethylhexyl) phthalate	ND		0.0050	0.0022	mg/L		02/24/23 17:45	02/25/23 07:18	1
Butyl benzyl phthalate	ND		0.0020	0.00067	mg/L		02/24/23 17:45	02/25/23 07:18	1
Caprolactam	ND		0.0050	0.00093	mg/L		02/24/23 17:45	02/25/23 07:18	1
Carbazole	ND		0.0010	0.00049	mg/L		02/24/23 17:45	02/25/23 07:18	1
Chrysene	ND		0.00020	0.00019	mg/L		02/24/23 17:45	02/25/23 07:18	1
Dibenz(a,h)anthracene	ND		0.00020	0.00015	mg/L		02/24/23 17:45	02/25/23 07:18	1
Dibenzofuran	ND		0.0010	0.00056	mg/L		02/24/23 17:45	02/25/23 07:18	1
Diethyl phthalate	ND		0.0050	0.0038	mg/L		02/24/23 17:45	02/25/23 07:18	1
Dimethyl phthalate	ND		0.0020	0.00052	mg/L		02/24/23 17:45	02/25/23 07:18	1
Di-n-butyl phthalate	ND		0.0050	0.0018	mg/L		02/24/23 17:45	02/25/23 07:18	1
Di-n-octyl phthalate	ND		0.0020	0.00082	mg/L		02/24/23 17:45	02/25/23 07:18	1
Fluoranthene	ND		0.00020	0.00016	mg/L		02/24/23 17:45	02/25/23 07:18	1
Fluorene	ND		0.00020	0.00017	mg/L		02/24/23 17:45	02/25/23 07:18	1
Hexachlorobenzene	ND		0.00020	0.00016	mg/L		02/24/23 17:45	02/25/23 07:18	1
Hexachlorobutadiene	ND		0.0010	0.00054	mg/L		02/24/23 17:45	02/25/23 07:18	1
Hexachlorocyclopentadiene	ND		0.010	0.0018	mg/L		02/24/23 17:45	02/25/23 07:18	1
Hexachloroethane	ND		0.0010	0.00040	mg/L		02/24/23 17:45	02/25/23 07:18	1
Indeno[1,2,3-cd]pyrene	ND		0.00020	0.00014	mg/L		02/24/23 17:45	02/25/23 07:18	1
Isophorone	ND		0.0010	0.00032	mg/L		02/24/23 17:45	02/25/23 07:18	1
N-Nitrosodi-n-propylamine	ND		0.0010	0.00025	mg/L		02/24/23 17:45	02/25/23 07:18	1
N-Nitrosodiphenylamine	ND		0.0010	0.00044	mg/L		02/24/23 17:45	02/25/23 07:18	1
Naphthalene	ND		0.00020	0.00011	mg/L		02/24/23 17:45	02/25/23 07:18	1
Nitrobenzene	ND		0.0010	0.00051	mg/L		02/24/23 17:45	02/25/23 07:18	1
Pentachlorophenol	ND		0.010	0.0031	mg/L		02/24/23 17:45	02/25/23 07:18	1
Phenanthrene	ND		0.00020	0.00017	mg/L		02/24/23 17:45	02/25/23 07:18	1
Phenol	ND		0.0010	0.00013	mg/L		02/24/23 17:45	02/25/23 07:18	1
Pyrene	ND		0.00020	0.00018	mg/L		02/24/23 17:45	02/25/23 07:18	1
3 & 4 Methylphenol	ND		0.0020	0.00019	mg/L		02/24/23 17:45	02/25/23 07:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	106		46 - 137	02/24/23 17:45	02/25/23 07:18	1
Phenol-d5 (Surr)	54		26 - 120	02/24/23 17:45	02/25/23 07:18	1
Nitrobenzene-d5 (Surr)	72		24 - 120	02/24/23 17:45	02/25/23 07:18	1
2-Fluorophenol (Surr)	51		19 - 120	02/24/23 17:45	02/25/23 07:18	1
2-Fluorobiphenyl (Surr)	78		33 - 120	02/24/23 17:45	02/25/23 07:18	1
2,4,6-Tribromophenol (Surr)	69		10 - 120	02/24/23 17:45	02/25/23 07:18	1

Lab Sample ID: LCS 240-563384/2-A
Matrix: Water
Analysis Batch: 563439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.0320	0.0269		mg/L		84	48 - 120
bis (2-chloroisopropyl) ether	0.0320	0.0228		mg/L		71	41 - 120
2,4,5-Trichlorophenol	0.0320	0.0294		mg/L		92	52 - 123
2,4,6-Trichlorophenol	0.0320	0.0290		mg/L		91	51 - 120
2,4-Dichlorophenol	0.0320	0.0275		mg/L		86	53 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563384/2-A
Matrix: Water
Analysis Batch: 563439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dimethylphenol	0.0320	0.0217		mg/L		68	44 - 120
2,4-Dinitrophenol	0.0640	0.0531		mg/L		83	11 - 139
2,4-Dinitrotoluene	0.0320	0.0270		mg/L		84	58 - 125
2,6-Dinitrotoluene	0.0320	0.0274		mg/L		85	54 - 132
2-Chloronaphthalene	0.0320	0.0278		mg/L		87	51 - 120
2-Chlorophenol	0.0320	0.0294		mg/L		92	46 - 120
2-Methylnaphthalene	0.0320	0.0249		mg/L		78	49 - 120
2-Methylphenol	0.0320	0.0282		mg/L		88	45 - 120
2-Nitroaniline	0.0320	0.0257		mg/L		80	57 - 121
2-Nitrophenol	0.0320	0.0258		mg/L		81	51 - 120
3,3'-Dichlorobenzidine	0.0640	0.0518		mg/L		81	51 - 154
3-Nitroaniline	0.0320	0.0337		mg/L		105	47 - 123
4,6-Dinitro-2-methylphenol	0.0640	0.0596		mg/L		93	49 - 130
4-Bromophenyl phenyl ether	0.0320	0.0265		mg/L		83	58 - 125
4-Chloro-3-methylphenol	0.0320	0.0241		mg/L		75	52 - 120
4-Chloroaniline	0.0320	0.00846		mg/L		26	10 - 126
4-Chlorophenyl phenyl ether	0.0320	0.0253		mg/L		79	55 - 120
4-Nitroaniline	0.0320	0.0387		mg/L		121	56 - 127
4-Nitrophenol	0.0640	0.0435		mg/L		68	10 - 120
Acenaphthene	0.0320	0.0305		mg/L		95	54 - 120
Acenaphthylene	0.0320	0.0265		mg/L		83	50 - 120
Acetophenone	0.0320	0.0236		mg/L		74	47 - 120
Anthracene	0.0320	0.0267		mg/L		83	58 - 121
Atrazine	0.0320	0.0292		mg/L		91	68 - 126
Benzaldehyde	0.0320	0.0408		mg/L		128	26 - 147
Benzo[a]anthracene	0.0320	0.0291		mg/L		91	61 - 120
Benzo[a]pyrene	0.0320	0.0262		mg/L		82	56 - 131
Benzo[b]fluoranthene	0.0320	0.0254		mg/L		79	57 - 130
Benzo[g,h,i]perylene	0.0320	0.0256		mg/L		80	58 - 120
Benzo[k]fluoranthene	0.0320	0.0248		mg/L		78	53 - 137
Bis(2-chloroethoxy)methane	0.0320	0.0235		mg/L		73	49 - 120
Bis(2-chloroethyl)ether	0.0320	0.0224		mg/L		70	40 - 120
Bis(2-ethylhexyl) phthalate	0.0320	0.0255		mg/L		80	60 - 126
Butyl benzyl phthalate	0.0320	0.0267		mg/L		83	58 - 124
Caprolactam	0.0320	0.00990		mg/L		31	10 - 120
Carbazole	0.0320	0.0274		mg/L		86	60 - 130
Chrysene	0.0320	0.0282		mg/L		88	57 - 120
Dibenz(a,h)anthracene	0.0320	0.0272		mg/L		85	58 - 120
Dibenzofuran	0.0320	0.0251		mg/L		79	54 - 120
Diethyl phthalate	0.0320	0.0277		mg/L		87	55 - 120
Dimethyl phthalate	0.0320	0.0260		mg/L		81	49 - 125
Di-n-butyl phthalate	0.0320	0.0270		mg/L		84	59 - 130
Di-n-octyl phthalate	0.0320	0.0237		mg/L		74	57 - 126
Fluoranthene	0.0320	0.0275		mg/L		86	58 - 128
Fluorene	0.0320	0.0293		mg/L		91	55 - 120
Hexachlorobenzene	0.0320	0.0293		mg/L		92	55 - 120
Hexachlorobutadiene	0.0320	0.0236		mg/L		74	41 - 120
Hexachlorocyclopentadiene	0.0320	0.0272		mg/L		85	15 - 120
Hexachloroethane	0.0320	0.0210		mg/L		66	39 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563384/2-A
Matrix: Water
Analysis Batch: 563439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Indeno[1,2,3-cd]pyrene	0.0320	0.0275		mg/L		86	59 - 122
Isophorone	0.0320	0.0231		mg/L		72	51 - 120
N-Nitrosodi-n-propylamine	0.0320	0.0224		mg/L		70	49 - 120
N-Nitrosodiphenylamine	0.0320	0.0262		mg/L		82	56 - 125
Naphthalene	0.0320	0.0230		mg/L		72	46 - 120
Nitrobenzene	0.0320	0.0221		mg/L		69	47 - 120
Pentachlorophenol	0.0640	0.0584		mg/L		91	19 - 132
Phenanthrene	0.0320	0.0256		mg/L		80	55 - 120
Phenol	0.0320	0.0241		mg/L		75	10 - 120
Pyrene	0.0320	0.0272		mg/L		85	59 - 120
3 & 4 Methylphenol	0.0320	0.0258		mg/L		81	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	95		46 - 137
Phenol-d5 (Surr)	80		26 - 120
Nitrobenzene-d5 (Surr)	79		24 - 120
2-Fluorophenol (Surr)	94		19 - 120
2-Fluorobiphenyl (Surr)	80		33 - 120
2,4,6-Tribromophenol (Surr)	81		10 - 120

Lab Sample ID: LCS 240-563384/3-A
Matrix: Water
Analysis Batch: 563393

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563384

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	113		46 - 137
Phenol-d5 (Surr)	66		26 - 120
Nitrobenzene-d5 (Surr)	78		24 - 120
2-Fluorophenol (Surr)	58		19 - 120
2-Fluorobiphenyl (Surr)	85		33 - 120
2,4,6-Tribromophenol (Surr)	83		10 - 120

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-563342/2-A
Matrix: Water
Analysis Batch: 563567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 10:33	1
Barium	ND		0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 10:33	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 10:33	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 10:33	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 10:33	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 10:33	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 10:33	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-563342/3-A
Matrix: Water
Analysis Batch: 563567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.04		mg/L		102	50 - 150
Barium	2.00	1.88		mg/L		94	50 - 150
Cadmium	1.00	0.960		mg/L		96	50 - 150
Chromium	1.00	0.964		mg/L		96	50 - 150
Lead	1.00	0.914		mg/L		91	50 - 150
Selenium	2.00	2.07		mg/L		104	50 - 150
Silver	0.100	0.101		mg/L		101	50 - 150

Lab Sample ID: LB 240-563225/1-B
Matrix: Water
Analysis Batch: 563567

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563342

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		02/24/23 14:00	02/27/23 10:17	1
Barium	0.00300	J	0.50	0.0013	mg/L		02/24/23 14:00	02/27/23 10:17	1
Cadmium	ND		0.050	0.00020	mg/L		02/24/23 14:00	02/27/23 10:17	1
Chromium	ND		0.050	0.0040	mg/L		02/24/23 14:00	02/27/23 10:17	1
Lead	ND		0.050	0.0028	mg/L		02/24/23 14:00	02/27/23 10:17	1
Selenium	ND		0.050	0.0060	mg/L		02/24/23 14:00	02/27/23 10:17	1
Silver	ND		0.050	0.00062	mg/L		02/24/23 14:00	02/27/23 10:17	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-563343/2-A
Matrix: Water
Analysis Batch: 563612

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563343

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:38	1

Lab Sample ID: LCS 240-563343/3-A
Matrix: Water
Analysis Batch: 563612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563343

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00530		mg/L		106	80 - 120

Lab Sample ID: LB 240-563225/1-C
Matrix: Water
Analysis Batch: 563612

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 563343

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		02/24/23 14:00	02/27/23 17:32	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Method: 1010B - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-563700/1
Matrix: Water
Analysis Batch: 563700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ignitability (Flashpoint)	81.0	82.2		Fahrenheit		102	97 - 103

Lab Sample ID: 240-180852-1 DU
Matrix: Water
Analysis Batch: 563700

Client Sample ID: WC-257225-PLEASANT
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ignitability (Flashpoint)	>200		>200		Degrees F		NC	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

GC/MS VOA

Analysis Batch: 563444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	Total/NA	Water	8260D	
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	8260D	
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	8260D	
240-180852-4	NS-TB022323	Total/NA	Water	8260D	
MB 240-563444/8	Method Blank	Total/NA	Water	8260D	
LCS 240-563444/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-563444/6	Lab Control Sample	Total/NA	Water	8260D	
240-180852-3 MS	WC-257516- GAS STATION	Total/NA	Water	8260D	
240-180852-3 MSD	WC-257516- GAS STATION	Total/NA	Water	8260D	

Analysis Batch: 563547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	Total/NA	Water	8260D	
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	8260D	
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	8260D	
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	8260D	
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	8260D	
MB 240-563547/8	Method Blank	Total/NA	Water	8260D	
LCS 240-563547/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-563547/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 563384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	Total/NA	Water	3510C LVI	
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	3510C LVI	
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	3510C LVI	
MB 240-563384/1-A	Method Blank	Total/NA	Water	3510C LVI	
LCS 240-563384/2-A	Lab Control Sample	Total/NA	Water	3510C LVI	
LCS 240-563384/3-A	Lab Control Sample	Total/NA	Water	3510C LVI	

Analysis Batch: 563393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-563384/1-A	Method Blank	Total/NA	Water	8270E	563384
LCS 240-563384/3-A	Lab Control Sample	Total/NA	Water	8270E	563384

Analysis Batch: 563439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	Total/NA	Water	8270E	563384
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	8270E	563384
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	8270E	563384
LCS 240-563384/2-A	Lab Control Sample	Total/NA	Water	8270E	563384

Metals

Leach Batch: 563225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	TCLP	Water	1311	
240-180852-2	WC-251068-BLUE BLDG EAST	TCLP	Water	1311	
240-180852-3	WC-257516- GAS STATION	TCLP	Water	1311	
LB 240-563225/1-B	Method Blank	TCLP	Water	1311	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Metals (Continued)

Leach Batch: 563225 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 240-563225/1-C	Method Blank	TCLP	Water	1311	

Prep Batch: 563342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	TCLP	Water	3010A	563225
240-180852-2	WC-251068-BLUE BLDG EAST	TCLP	Water	3010A	563225
240-180852-3	WC-257516- GAS STATION	TCLP	Water	3010A	563225
LB 240-563225/1-B	Method Blank	TCLP	Water	3010A	563225
MB 240-563342/2-A	Method Blank	Total/NA	Water	3010A	
LCS 240-563342/3-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 563343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	TCLP	Water	7470A	563225
240-180852-2	WC-251068-BLUE BLDG EAST	TCLP	Water	7470A	563225
240-180852-3	WC-257516- GAS STATION	TCLP	Water	7470A	563225
LB 240-563225/1-C	Method Blank	TCLP	Water	7470A	563225
MB 240-563343/2-A	Method Blank	Total/NA	Water	7470A	
LCS 240-563343/3-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 563567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	TCLP	Water	6010D	563342
240-180852-2	WC-251068-BLUE BLDG EAST	TCLP	Water	6010D	563342
240-180852-3	WC-257516- GAS STATION	TCLP	Water	6010D	563342
LB 240-563225/1-B	Method Blank	TCLP	Water	6010D	563342
MB 240-563342/2-A	Method Blank	Total/NA	Water	6010D	563342
LCS 240-563342/3-A	Lab Control Sample	Total/NA	Water	6010D	563342

Analysis Batch: 563612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	TCLP	Water	7470A	563343
240-180852-2	WC-251068-BLUE BLDG EAST	TCLP	Water	7470A	563343
240-180852-3	WC-257516- GAS STATION	TCLP	Water	7470A	563343
LB 240-563225/1-C	Method Blank	TCLP	Water	7470A	563343
MB 240-563343/2-A	Method Blank	Total/NA	Water	7470A	563343
LCS 240-563343/3-A	Lab Control Sample	Total/NA	Water	7470A	563343

General Chemistry

Analysis Batch: 563700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180852-1	WC-257225-PLEASANT	Total/NA	Water	1010B	
240-180852-2	WC-251068-BLUE BLDG EAST	Total/NA	Water	1010B	
240-180852-3	WC-257516- GAS STATION	Total/NA	Water	1010B	
LCS 240-563700/1	Lab Control Sample	Total/NA	Water	1010B	
240-180852-1 DU	WC-257225-PLEASANT	Total/NA	Water	1010B	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257225-PLEASANT

Lab Sample ID: 240-180852-1

Date Collected: 02/23/23 17:58

Matrix: Water

Date Received: 02/24/23 13:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	563444	SAM	EET CAN	02/26/23 16:48
Total/NA	Analysis	8260D		10	563547	SAM	EET CAN	02/27/23 14:39
Total/NA	Prep	3510C LVI			563384	BMB	EET CAN	02/24/23 17:45
Total/NA	Analysis	8270E		2500	563439	TMH	EET CAN	02/26/23 09:03
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:29
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 17:58
Total/NA	Analysis	1010B		1	563700	MED	EET CAN	02/28/23 11:38

Client Sample ID: WC-251068-BLUE BLDG EAST

Lab Sample ID: 240-180852-2

Date Collected: 02/23/23 17:40

Matrix: Water

Date Received: 02/24/23 13:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		4	563444	SAM	EET CAN	02/26/23 20:46
Total/NA	Analysis	8260D		40	563547	SAM	EET CAN	02/27/23 15:28
Total/NA	Analysis	8260D		1	563547	SAM	EET CAN	02/27/23 19:51
Total/NA	Prep	3510C LVI			563384	BMB	EET CAN	02/24/23 17:45
Total/NA	Analysis	8270E		2500	563439	TMH	EET CAN	02/26/23 09:26
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:33
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 18:05
Total/NA	Analysis	1010B		1	563700	MED	EET CAN	02/28/23 12:15

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		4	563444	SAM	EET CAN	02/26/23 21:09
Total/NA	Analysis	8260D		20	563547	SAM	EET CAN	02/27/23 15:04
Total/NA	Analysis	8260D		1	563547	SAM	EET CAN	02/27/23 20:38
Total/NA	Prep	3510C LVI			563384	BMB	EET CAN	02/24/23 17:46
Total/NA	Analysis	8270E		20	563439	TMH	EET CAN	02/26/23 09:50
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	3010A			563342	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	6010D		1	563567	KLC	EET CAN	02/27/23 11:38

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-180852-1

Client Sample ID: WC-257516- GAS STATION

Lab Sample ID: 240-180852-3

Date Collected: 02/23/23 17:45

Matrix: Water

Date Received: 02/24/23 13:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			563225	DRJ	EET CAN	02/24/23 13:00 - 02/24/23 13:30 ¹
TCLP	Prep	7470A			563343	AJC	EET CAN	02/24/23 14:00
TCLP	Analysis	7470A		1	563612	MRL	EET CAN	02/27/23 18:07
Total/NA	Analysis	1010B		1	563700	MED	EET CAN	02/28/23 12:34

Client Sample ID: NS-TB022323

Lab Sample ID: 240-180852-4

Date Collected: 02/23/23 00:00

Matrix: Water

Date Received: 02/24/23 13:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	563444	SAM	EET CAN	02/26/23 14:26

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-180852-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-27-23 *
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login #: 180852

Client Accadis Site Name _____ Cooler unpacked by: [Signature]
 Cooler Received on 2-23-23 Opened on 2-24-23

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box _____ Client Cooler _____ Box _____ Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 2.6 °C
 IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No
- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? Yes No NA ← Larger than this.
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____
There is no 1L plastic for TSS, no 250mL plastic for pH, no 60mL vials for DBO micro extraction. Date 2-24-23
Also there is no preserved volume for TOC.

19. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) 1x 40 mL for Blue Bldg were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____
 VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/9/2023 2:56:25 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181183-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/9/2023 2:56:25 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	8
Sample Summary	9
Detection Summary	10
Client Sample Results	12
Surrogate Summary	38
QC Sample Results	40
QC Association Summary	54
Lab Chronicle	58
Certification Summary	61
Chain of Custody	62

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Job ID: 240-181183-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181183-1

Receipt

The samples were received on 3/1/2023 8:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.1°C, 0.2°C and 0.2°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564039 recovered above the upper control limit for Bromomethane and Dichloro-difluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC - 251060 - BLUE BLDG EAST (240-181183-2), WC - 251633 - PLEASANT (240-181183-4), WC - 251478 - GAS STATION (240-181183-5), TB - 01 (240-181183-6), TB - 02 (240-181183-7), TB - 03 (240-181183-8), (CCV 240-564039/4), (CCVIS 240-564039/3), (LCS 240-564039/5), (LCS 240-564039/6), (MB 240-564039/8), (240-180978-B-5), (240-180978-D-5 MS) and (240-180978-G-5 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564153 recovered above the upper control limit for Bromomethane and Dichloro-difluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC - 257204 - BLUE BLDG WEST (240-181183-1), WC - 251060 - BLUE BLDG EAST (240-181183-2), WC - 251079 - CLARK (240-181183-3), WC - 251478 - GAS STATION (240-181183-5), (CCV 240-564153/4), (CCVIS 240-564153/3), (LCS 240-564153/5), (LCS 240-564153/6), (MB 240-564153/8), (240-180978-L-5), (240-180978-A-5 MS) and (240-180978-I-5 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-563981.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-564574 recovered outside acceptance criteria, low biased, for 2,4-Dinitrophenol. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8270E: The RL for Hexachlorobenzene is below the low point of the calibration. The RL is supported by the MDL. WC - 257204 - BLUE BLDG WEST (240-181183-1), WC - 251060 - BLUE BLDG EAST (240-181183-2), WC - 251079 - CLARK (240-181183-3), WC - 251633 - PLEASANT (240-181183-4) and WC - 251478 - GAS STATION (240-181183-5)

Method 8270E: The initial calibration verification (ICV) %D result for batch 240-564574 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics

Method 8015D_DRO: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-564322.

Method 8015D_DRO: Surrogate recovery for the following sample was outside control limits: WC - 251079 - CLARK (240-181183-3). Re-extraction and re-analysis was performed confirming surrogate recovery outside control limits due to matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Job ID: 240-181183-1 (Continued)

Laboratory: Eurofins Canton (Continued)

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1010B	Ignitability, Pensky-Martens Closed-Cup Method	SW846	EET CAN
2540D-2015	Total Suspended Solids (Dried at 103-105°C)	SM	EET CAN
5310 C-2014	Total Organic Carbon/Persulfate - Ultrav	SM	EET CAN
9040C	pH	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C LVI	Liquid-Liquid Extraction (Separatory Funnel) LVI	SW846	EET CAN
3511	Microextraction of Organic Compounds	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181183-1	WC - 257204 - BLUE BLDG WEST	Water	03/01/23 12:40	03/01/23 20:00
240-181183-2	WC - 251060 - BLUE BLDG EAST	Water	03/01/23 12:50	03/01/23 20:00
240-181183-3	WC - 251079 - CLARK	Water	03/01/23 13:00	03/01/23 20:00
240-181183-4	WC - 251633 - PLEASANT	Water	03/01/23 13:25	03/01/23 20:00
240-181183-5	WC - 251478 - GAS STATION	Water	03/01/23 13:35	03/01/23 20:00
240-181183-6	TB - 01	Water	03/01/23 00:00	03/01/23 20:00
240-181183-7	TB - 02	Water	03/01/23 00:00	03/01/23 20:00
240-181183-8	TB - 03	Water	03/01/23 00:00	03/01/23 20:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0034	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.017		0.010	0.0054	mg/L	1		8260D	Total/NA
Xylenes, Total	0.00071	J	0.0020	0.00042	mg/L	1		8260D	Total/NA
Butyl acrylate	9.6		2.0	0.46	mg/L	200		8260D	Total/NA
2-Ethylhexyl acrylate	0.045		0.010	0.0033	mg/L	1		8260D	Total/NA
2-Methylnaphthalene	0.0014		0.0010	0.00056	mg/L	5		8270E	Total/NA
Naphthalene	0.0092		0.0010	0.00055	mg/L	5		8270E	Total/NA
2-Butoxyethanol - RA	0.22		0.040	0.011	mg/L	10		8270E	Total/NA
Diesel Range Organics [C10 - C28]	1300	B	500	67	ug/L	1		8015D	Total/NA
Barium	0.021	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	120		17	4.2	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	26		1.0	0.35	mg/L	1		5310 C-2014	Total/NA
corrosivity by pH	8.0	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.014		0.010	0.0054	mg/L	1		8260D	Total/NA
Butyl acrylate	24		4.2	0.96	mg/L	416.667		8260D	Total/NA
2-Ethylhexyl acrylate	0.21	J	0.40	0.13	mg/L	40		8260D	Total/NA
2-Butoxyethanol	1.6		0.40	0.11	mg/L	100		8270E	Total/NA
Diesel Range Organics [C10 - C28]	1400	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.064	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Silver	0.00084	J	0.050	0.00062	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	7.3		4.0	1.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	49		5.0	1.7	mg/L	5		5310 C-2014	Total/NA
corrosivity by pH	7.9	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0019	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.011		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00098	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0011		0.0010	0.00045	mg/L	1		8260D	Total/NA
Butyl acrylate	0.22		0.050	0.011	mg/L	5		8260D	Total/NA
2-Ethylhexyl acrylate	0.22		0.050	0.017	mg/L	5		8260D	Total/NA
2-Butoxyethanol - RA	12		4.0	1.1	mg/L	1000		8270E	Total/NA
Diesel Range Organics [C10 - C28]	1900	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.037	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	23		5.1	1.3	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	49		5.0	1.7	mg/L	5		5310 C-2014	Total/NA
corrosivity by pH	7.9	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0032	J	0.010	0.0012	mg/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251633 - PLEASANT (Continued)

Lab Sample ID: 240-181183-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	0.014		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.0016		0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0046		0.0010	0.00045	mg/L	1		8260D	Total/NA
Butyl acrylate	0.47		0.10	0.023	mg/L	10		8260D	Total/NA
Methyl acrylate	0.0014	J	0.0020	0.00062	mg/L	1		8260D	Total/NA
2-Ethylhexyl acrylate	0.18		0.10	0.033	mg/L	10		8260D	Total/NA
2-Butoxyethanol	5.4		0.80	0.21	mg/L	200		8270E	Total/NA
Diesel Range Organics [C10 - C28]	2000	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.044	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	23		4.3	1.1	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	140		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.9	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Butyl acrylate	0.24		0.040	0.0092	mg/L	4		8260D	Total/NA
Methyl acrylate	0.00097	J	0.0020	0.00062	mg/L	1		8260D	Total/NA
2-Ethylhexyl acrylate	0.046		0.040	0.013	mg/L	4		8260D	Total/NA
2-Butoxyethanol	11		1.6	0.42	mg/L	400		8270E	Total/NA
Diesel Range Organics [C10 - C28]	2000	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.038	J B	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	13		4.0	1.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	20		1.0	0.35	mg/L	1		5310 C-2014	Total/NA
corrosivity by pH	7.5	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: TB - 01

Lab Sample ID: 240-181183-6

No Detections.

Client Sample ID: TB - 02

Lab Sample ID: 240-181183-7

No Detections.

Client Sample ID: TB - 03

Lab Sample ID: 240-181183-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Date Collected: 03/01/23 12:40

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 15:17	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/03/23 15:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/03/23 15:17	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 15:17	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/03/23 15:17	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/03/23 15:17	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/03/23 15:17	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/03/23 15:17	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/03/23 15:17	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/03/23 15:17	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/03/23 15:17	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/03/23 15:17	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/03/23 15:17	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/03/23 15:17	1
2-Butanone (MEK)	0.0034	J	0.010	0.0012	mg/L			03/03/23 15:17	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/03/23 15:17	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/03/23 15:17	1
Acetone	0.017		0.010	0.0054	mg/L			03/03/23 15:17	1
Benzene	ND		0.0010	0.00042	mg/L			03/03/23 15:17	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/03/23 15:17	1
Bromoform	ND		0.0010	0.00076	mg/L			03/03/23 15:17	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/03/23 15:17	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/03/23 15:17	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/03/23 15:17	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/03/23 15:17	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/03/23 15:17	1
Chloroform	ND		0.0010	0.00047	mg/L			03/03/23 15:17	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/03/23 15:17	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/03/23 15:17	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/03/23 15:17	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/03/23 15:17	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/03/23 15:17	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/03/23 15:17	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/03/23 15:17	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/03/23 15:17	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/03/23 15:17	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/03/23 15:17	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/03/23 15:17	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/03/23 15:17	1
Styrene	ND		0.0010	0.00045	mg/L			03/03/23 15:17	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/03/23 15:17	1
Toluene	ND		0.0010	0.00044	mg/L			03/03/23 15:17	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/03/23 15:17	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/03/23 15:17	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/03/23 15:17	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/03/23 15:17	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/03/23 15:17	1
Xylenes, Total	0.00071	J	0.0020	0.00042	mg/L			03/03/23 15:17	1
Butyl acrylate	9.6		2.0	0.46	mg/L			03/03/23 21:38	200

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Date Collected: 03/01/23 12:40

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/03/23 15:17	1
2-Ethylhexyl acrylate	0.045		0.010	0.0033	mg/L			03/03/23 15:17	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	103		78 - 122				03/03/23 15:17	1	1
<i>Toluene-d8 (Surr)</i>	95		78 - 122				03/03/23 21:38	200	200
<i>Dibromofluoromethane (Surr)</i>	111		73 - 120				03/03/23 15:17	1	1
<i>Dibromofluoromethane (Surr)</i>	106		73 - 120				03/03/23 21:38	200	200
<i>4-Bromofluorobenzene (Surr)</i>	106		56 - 136				03/03/23 15:17	1	1
<i>4-Bromofluorobenzene (Surr)</i>	95		56 - 136				03/03/23 21:38	200	200
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		62 - 137				03/03/23 15:17	1	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		62 - 137				03/03/23 21:38	200	200

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.0050	0.0025	mg/L		03/02/23 08:54	03/08/23 12:08	5
bis (2-chloroisopropyl) ether	ND		0.0050	0.0028	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4,5-Trichlorophenol	ND		0.025	0.0099	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4,6-Trichlorophenol	ND		0.025	0.0090	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4-Dichlorophenol	ND		0.010	0.0013	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4-Dimethylphenol	ND		0.010	0.0026	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4-Dinitrophenol	ND		0.050	0.031	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,4-Dinitrotoluene	ND		0.025	0.010	mg/L		03/02/23 08:54	03/08/23 12:08	5
2,6-Dinitrotoluene	ND		0.025	0.011	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Chloronaphthalene	ND		0.0050	0.0024	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Chlorophenol	ND		0.0050	0.0014	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Methylnaphthalene	0.0014		0.0010	0.00056	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Methylphenol	ND		0.0050	0.0010	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Nitroaniline	ND		0.010	0.0026	mg/L		03/02/23 08:54	03/08/23 12:08	5
2-Nitrophenol	ND		0.010	0.0028	mg/L		03/02/23 08:54	03/08/23 12:08	5
3,3'-Dichlorobenzidine	ND		0.025	0.0058	mg/L		03/02/23 08:54	03/08/23 12:08	5
3-Nitroaniline	ND		0.010	0.0028	mg/L		03/02/23 08:54	03/08/23 12:08	5
4,6-Dinitro-2-methylphenol	ND		0.025	0.014	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Bromophenyl phenyl ether	ND		0.010	0.0025	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Chloro-3-methylphenol	ND		0.010	0.0015	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Chloroaniline	ND		0.010	0.0016	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Chlorophenyl phenyl ether	ND		0.010	0.0028	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Nitroaniline	ND		0.010	0.0046	mg/L		03/02/23 08:54	03/08/23 12:08	5
4-Nitrophenol	ND		0.050	0.011	mg/L		03/02/23 08:54	03/08/23 12:08	5
Acenaphthene	ND		0.0010	0.00086	mg/L		03/02/23 08:54	03/08/23 12:08	5
Acenaphthylene	ND		0.0010	0.00063	mg/L		03/02/23 08:54	03/08/23 12:08	5
Acetophenone	ND		0.0050	0.0018	mg/L		03/02/23 08:54	03/08/23 12:08	5
Anthracene	ND		0.0010	0.00068	mg/L		03/02/23 08:54	03/08/23 12:08	5
Atrazine	ND		0.010	0.0048	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzaldehyde	ND		0.010	0.0038	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzo[a]anthracene	ND		0.0010	0.00086	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzo[a]pyrene	ND		0.0010	0.00087	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzo[b]fluoranthene	ND		0.0010	0.00077	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzo[g,h,i]perylene	ND		0.0010	0.00089	mg/L		03/02/23 08:54	03/08/23 12:08	5
Benzo[k]fluoranthene	ND		0.0010	0.00070	mg/L		03/02/23 08:54	03/08/23 12:08	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Date Collected: 03/01/23 12:40

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.0050	0.0023	mg/L		03/02/23 08:54	03/08/23 12:08	5
Bis(2-chloroethyl)ether	ND		0.0050	0.0020	mg/L		03/02/23 08:54	03/08/23 12:08	5
Bis(2-ethylhexyl) phthalate	ND		0.025	0.011	mg/L		03/02/23 08:54	03/08/23 12:08	5
Butyl benzyl phthalate	ND		0.010	0.0033	mg/L		03/02/23 08:54	03/08/23 12:08	5
Caprolactam	ND		0.025	0.0047	mg/L		03/02/23 08:54	03/08/23 12:08	5
Carbazole	ND		0.0050	0.0025	mg/L		03/02/23 08:54	03/08/23 12:08	5
Chrysene	ND		0.0010	0.00093	mg/L		03/02/23 08:54	03/08/23 12:08	5
Dibenz(a,h)anthracene	ND		0.0010	0.00076	mg/L		03/02/23 08:54	03/08/23 12:08	5
Dibenzofuran	ND		0.0050	0.0028	mg/L		03/02/23 08:54	03/08/23 12:08	5
Diethyl phthalate	ND		0.025	0.019	mg/L		03/02/23 08:54	03/08/23 12:08	5
Dimethyl phthalate	ND		0.010	0.0026	mg/L		03/02/23 08:54	03/08/23 12:08	5
Di-n-butyl phthalate	ND		0.025	0.0090	mg/L		03/02/23 08:54	03/08/23 12:08	5
Di-n-octyl phthalate	ND		0.010	0.0041	mg/L		03/02/23 08:54	03/08/23 12:08	5
Fluoranthene	ND		0.0010	0.00080	mg/L		03/02/23 08:54	03/08/23 12:08	5
Fluorene	ND		0.0010	0.00085	mg/L		03/02/23 08:54	03/08/23 12:08	5
Hexachlorobenzene	ND		0.0010	0.00081	mg/L		03/02/23 08:54	03/08/23 12:08	5
Hexachlorobutadiene	ND		0.0050	0.0027	mg/L		03/02/23 08:54	03/08/23 12:08	5
Hexachlorocyclopentadiene	ND		0.050	0.0088	mg/L		03/02/23 08:54	03/08/23 12:08	5
Hexachloroethane	ND		0.0050	0.0020	mg/L		03/02/23 08:54	03/08/23 12:08	5
Indeno[1,2,3-cd]pyrene	ND		0.0010	0.00068	mg/L		03/02/23 08:54	03/08/23 12:08	5
Isophorone	ND		0.0050	0.0016	mg/L		03/02/23 08:54	03/08/23 12:08	5
N-Nitrosodi-n-propylamine	ND		0.0050	0.0013	mg/L		03/02/23 08:54	03/08/23 12:08	5
N-Nitrosodiphenylamine	ND		0.0050	0.0022	mg/L		03/02/23 08:54	03/08/23 12:08	5
Naphthalene	0.0092		0.0010	0.00055	mg/L		03/02/23 08:54	03/08/23 12:08	5
Nitrobenzene	ND		0.0050	0.0026	mg/L		03/02/23 08:54	03/08/23 12:08	5
Pentachlorophenol	ND		0.050	0.016	mg/L		03/02/23 08:54	03/08/23 12:08	5
Phenanthrene	ND		0.0010	0.00084	mg/L		03/02/23 08:54	03/08/23 12:08	5
Phenol	ND		0.0050	0.00064	mg/L		03/02/23 08:54	03/08/23 12:08	5
Pyrene	ND		0.0010	0.00088	mg/L		03/02/23 08:54	03/08/23 12:08	5
3 & 4 Methylphenol	ND		0.010	0.00096	mg/L		03/02/23 08:54	03/08/23 12:08	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	74		46 - 137	03/02/23 08:54	03/08/23 12:08	5
Phenol-d5 (Surr)	47		26 - 120	03/02/23 08:54	03/08/23 12:08	5
Nitrobenzene-d5 (Surr)	65		24 - 120	03/02/23 08:54	03/08/23 12:08	5
2-Fluorophenol (Surr)	54		19 - 120	03/02/23 08:54	03/08/23 12:08	5
2-Fluorobiphenyl (Surr)	67		33 - 120	03/02/23 08:54	03/08/23 12:08	5
2,4,6-Tribromophenol (Surr)	55		10 - 120	03/02/23 08:54	03/08/23 12:08	5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	0.22		0.040	0.011	mg/L		03/02/23 08:54	03/09/23 08:07	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	77		46 - 137	03/02/23 08:54	03/09/23 08:07	10
Phenol-d5 (Surr)	51		26 - 120	03/02/23 08:54	03/09/23 08:07	10
Nitrobenzene-d5 (Surr)	63		24 - 120	03/02/23 08:54	03/09/23 08:07	10
2-Fluorophenol (Surr)	47		19 - 120	03/02/23 08:54	03/09/23 08:07	10
2-Fluorobiphenyl (Surr)	87		33 - 120	03/02/23 08:54	03/09/23 08:07	10
2,4,6-Tribromophenol (Surr)	34		10 - 120	03/02/23 08:54	03/09/23 08:07	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Date Collected: 03/01/23 12:40

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	1300	B	500	67	ug/L		03/06/23 07:59	03/06/23 12:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	69		52 - 121				03/06/23 07:59	03/06/23 12:24	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 12:36	1
Barium	0.021	J B	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 12:36	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 12:36	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 12:36	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 12:36	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 12:36	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 12:36	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/03/23 08:46	1
Total Suspended Solids (SM 2540D-2015)	120		17	4.2	mg/L			03/03/23 10:03	1
Total Organic Carbon (SM 5310 C-2014)	26		1.0	0.35	mg/L			03/03/23 12:42	1
corrosivity by pH (SW846 9040C)	8.0	HF	0.1	0.1	SU			03/03/23 10:33	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Date Collected: 03/01/23 12:50

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 22:40	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 22:40	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 22:40	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 22:40	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 22:40	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 22:40	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 22:40	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 22:40	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 22:40	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 22:40	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 22:40	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 22:40	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 22:40	1
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L			03/02/23 22:40	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 22:40	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 22:40	1
Acetone	0.014		0.010	0.0054	mg/L			03/02/23 22:40	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 22:40	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 22:40	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 22:40	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 22:40	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 22:40	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 22:40	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 22:40	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 22:40	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 22:40	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 22:40	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 22:40	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 22:40	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 22:40	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 22:40	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 22:40	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 22:40	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 22:40	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 22:40	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 22:40	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 22:40	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 22:40	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 22:40	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 22:40	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 22:40	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 22:40	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 22:40	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 22:40	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 22:40	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 22:40	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 22:40	1
Butyl acrylate	24		4.2	0.96	mg/L			03/03/23 17:15	416.667

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Date Collected: 03/01/23 12:50

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/02/23 22:40	1
2-Ethylhexyl acrylate	0.21	J	0.40	0.13	mg/L			03/02/23 16:44	40
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		78 - 122					03/02/23 16:44	40
Toluene-d8 (Surr)	99		78 - 122					03/02/23 22:40	1
Toluene-d8 (Surr)	99		78 - 122					03/03/23 17:15	416.667
Dibromofluoromethane (Surr)	105		73 - 120					03/02/23 16:44	40
Dibromofluoromethane (Surr)	111		73 - 120					03/02/23 22:40	1
Dibromofluoromethane (Surr)	111		73 - 120					03/03/23 17:15	416.667
4-Bromofluorobenzene (Surr)	93		56 - 136					03/02/23 16:44	40
4-Bromofluorobenzene (Surr)	106		56 - 136					03/02/23 22:40	1
4-Bromofluorobenzene (Surr)	98		56 - 136					03/03/23 17:15	416.667
1,2-Dichloroethane-d4 (Surr)	99		62 - 137					03/02/23 16:44	40
1,2-Dichloroethane-d4 (Surr)	100		62 - 137					03/02/23 22:40	1
1,2-Dichloroethane-d4 (Surr)	106		62 - 137					03/03/23 17:15	416.667

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.10	0.049	mg/L		03/02/23 08:54	03/08/23 12:31	100
bis (2-chloroisopropyl) ether	ND		0.10	0.055	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4,5-Trichlorophenol	ND		0.50	0.20	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4,6-Trichlorophenol	ND		0.50	0.18	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4-Dichlorophenol	ND		0.20	0.026	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4-Dimethylphenol	ND		0.20	0.052	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4-Dinitrophenol	ND		1.0	0.62	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,4-Dinitrotoluene	ND		0.50	0.21	mg/L		03/02/23 08:54	03/08/23 12:31	100
2,6-Dinitrotoluene	ND		0.50	0.21	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Chloronaphthalene	ND		0.10	0.048	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Chlorophenol	ND		0.10	0.027	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Methylnaphthalene	ND		0.020	0.011	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Methylphenol	ND		0.10	0.021	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Nitroaniline	ND		0.20	0.051	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Nitrophenol	ND		0.20	0.056	mg/L		03/02/23 08:54	03/08/23 12:31	100
3,3'-Dichlorobenzidine	ND		0.50	0.12	mg/L		03/02/23 08:54	03/08/23 12:31	100
3-Nitroaniline	ND		0.20	0.057	mg/L		03/02/23 08:54	03/08/23 12:31	100
4,6-Dinitro-2-methylphenol	ND		0.50	0.28	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Bromophenyl phenyl ether	ND		0.20	0.050	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Chloro-3-methylphenol	ND		0.20	0.030	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Chloroaniline	ND		0.20	0.032	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Chlorophenyl phenyl ether	ND		0.20	0.055	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Nitroaniline	ND		0.20	0.092	mg/L		03/02/23 08:54	03/08/23 12:31	100
4-Nitrophenol	ND		1.0	0.22	mg/L		03/02/23 08:54	03/08/23 12:31	100
Acenaphthene	ND		0.020	0.017	mg/L		03/02/23 08:54	03/08/23 12:31	100
Acenaphthylene	ND		0.020	0.013	mg/L		03/02/23 08:54	03/08/23 12:31	100
Acetophenone	ND		0.10	0.037	mg/L		03/02/23 08:54	03/08/23 12:31	100
Anthracene	ND		0.020	0.014	mg/L		03/02/23 08:54	03/08/23 12:31	100
Atrazine	ND		0.20	0.095	mg/L		03/02/23 08:54	03/08/23 12:31	100
Benzaldehyde	ND		0.20	0.076	mg/L		03/02/23 08:54	03/08/23 12:31	100
Benzo[a]anthracene	ND		0.020	0.017	mg/L		03/02/23 08:54	03/08/23 12:31	100

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Date Collected: 03/01/23 12:50

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.020	0.017	mg/L		03/02/23 08:54	03/08/23 12:31	100
Benzo[b]fluoranthene	ND		0.020	0.015	mg/L		03/02/23 08:54	03/08/23 12:31	100
Benzo[g,h,i]perylene	ND		0.020	0.018	mg/L		03/02/23 08:54	03/08/23 12:31	100
Benzo[k]fluoranthene	ND		0.020	0.014	mg/L		03/02/23 08:54	03/08/23 12:31	100
Bis(2-chloroethoxy)methane	ND		0.10	0.046	mg/L		03/02/23 08:54	03/08/23 12:31	100
Bis(2-chloroethyl)ether	ND		0.10	0.040	mg/L		03/02/23 08:54	03/08/23 12:31	100
Bis(2-ethylhexyl) phthalate	ND		0.50	0.22	mg/L		03/02/23 08:54	03/08/23 12:31	100
Butyl benzyl phthalate	ND		0.20	0.067	mg/L		03/02/23 08:54	03/08/23 12:31	100
Caprolactam	ND		0.50	0.093	mg/L		03/02/23 08:54	03/08/23 12:31	100
Carbazole	ND		0.10	0.049	mg/L		03/02/23 08:54	03/08/23 12:31	100
Chrysene	ND		0.020	0.019	mg/L		03/02/23 08:54	03/08/23 12:31	100
Dibenz(a,h)anthracene	ND		0.020	0.015	mg/L		03/02/23 08:54	03/08/23 12:31	100
Dibenzofuran	ND		0.10	0.056	mg/L		03/02/23 08:54	03/08/23 12:31	100
Diethyl phthalate	ND		0.50	0.38	mg/L		03/02/23 08:54	03/08/23 12:31	100
Dimethyl phthalate	ND		0.20	0.052	mg/L		03/02/23 08:54	03/08/23 12:31	100
Di-n-butyl phthalate	ND		0.50	0.18	mg/L		03/02/23 08:54	03/08/23 12:31	100
Di-n-octyl phthalate	ND		0.20	0.082	mg/L		03/02/23 08:54	03/08/23 12:31	100
Fluoranthene	ND		0.020	0.016	mg/L		03/02/23 08:54	03/08/23 12:31	100
Fluorene	ND		0.020	0.017	mg/L		03/02/23 08:54	03/08/23 12:31	100
Hexachlorobenzene	ND		0.020	0.016	mg/L		03/02/23 08:54	03/08/23 12:31	100
Hexachlorobutadiene	ND		0.10	0.054	mg/L		03/02/23 08:54	03/08/23 12:31	100
Hexachlorocyclopentadiene	ND		1.0	0.18	mg/L		03/02/23 08:54	03/08/23 12:31	100
Hexachloroethane	ND		0.10	0.040	mg/L		03/02/23 08:54	03/08/23 12:31	100
Indeno[1,2,3-cd]pyrene	ND		0.020	0.014	mg/L		03/02/23 08:54	03/08/23 12:31	100
Isophorone	ND		0.10	0.032	mg/L		03/02/23 08:54	03/08/23 12:31	100
N-Nitrosodi-n-propylamine	ND		0.10	0.025	mg/L		03/02/23 08:54	03/08/23 12:31	100
N-Nitrosodiphenylamine	ND		0.10	0.044	mg/L		03/02/23 08:54	03/08/23 12:31	100
Naphthalene	ND		0.020	0.011	mg/L		03/02/23 08:54	03/08/23 12:31	100
Nitrobenzene	ND		0.10	0.051	mg/L		03/02/23 08:54	03/08/23 12:31	100
Pentachlorophenol	ND		1.0	0.31	mg/L		03/02/23 08:54	03/08/23 12:31	100
Phenanthrene	ND		0.020	0.017	mg/L		03/02/23 08:54	03/08/23 12:31	100
Phenol	ND		0.10	0.013	mg/L		03/02/23 08:54	03/08/23 12:31	100
Pyrene	ND		0.020	0.018	mg/L		03/02/23 08:54	03/08/23 12:31	100
3 & 4 Methylphenol	ND		0.20	0.019	mg/L		03/02/23 08:54	03/08/23 12:31	100
2-Butoxyethanol	1.6		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 12:31	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/02/23 08:54	03/08/23 12:31	100
Phenol-d5 (Surr)	0	S1-	26 - 120	03/02/23 08:54	03/08/23 12:31	100
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/02/23 08:54	03/08/23 12:31	100
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/02/23 08:54	03/08/23 12:31	100
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/02/23 08:54	03/08/23 12:31	100
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/02/23 08:54	03/08/23 12:31	100

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	1400	B	490	67	ug/L		03/06/23 07:59	03/06/23 12:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		52 - 121	03/06/23 07:59	03/06/23 12:52	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Date Collected: 03/01/23 12:50

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 12:41	1
Barium	0.064	J B	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 12:41	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 12:41	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 12:41	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 12:41	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 12:41	1
Silver	0.00084	J	0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 12:41	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/03/23 09:49	1
Total Suspended Solids (SM 2540D-2015)	7.3		4.0	1.0	mg/L			03/03/23 10:03	1
Total Organic Carbon (SM 5310 C-2014)	49		5.0	1.7	mg/L			03/03/23 12:02	5
corrosivity by pH (SW846 9040C)	7.9	HF	0.1	0.1	SU			03/03/23 08:52	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Date Collected: 03/01/23 13:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 14:53	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/03/23 14:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/03/23 14:53	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 14:53	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/03/23 14:53	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/03/23 14:53	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/03/23 14:53	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/03/23 14:53	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/03/23 14:53	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/03/23 14:53	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/03/23 14:53	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/03/23 14:53	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/03/23 14:53	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/03/23 14:53	1
2-Butanone (MEK)	0.0019	J	0.010	0.0012	mg/L			03/03/23 14:53	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/03/23 14:53	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/03/23 14:53	1
Acetone	0.011		0.010	0.0054	mg/L			03/03/23 14:53	1
Benzene	0.00098	J	0.0010	0.00042	mg/L			03/03/23 14:53	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/03/23 14:53	1
Bromoform	ND		0.0010	0.00076	mg/L			03/03/23 14:53	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/03/23 14:53	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/03/23 14:53	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/03/23 14:53	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/03/23 14:53	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/03/23 14:53	1
Chloroform	ND		0.0010	0.00047	mg/L			03/03/23 14:53	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/03/23 14:53	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/03/23 14:53	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/03/23 14:53	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/03/23 14:53	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/03/23 14:53	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/03/23 14:53	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/03/23 14:53	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/03/23 14:53	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/03/23 14:53	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/03/23 14:53	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/03/23 14:53	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/03/23 14:53	1
Styrene	ND		0.0010	0.00045	mg/L			03/03/23 14:53	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/03/23 14:53	1
Toluene	ND		0.0010	0.00044	mg/L			03/03/23 14:53	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/03/23 14:53	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/03/23 14:53	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/03/23 14:53	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/03/23 14:53	1
Vinyl chloride	0.0011		0.0010	0.00045	mg/L			03/03/23 14:53	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/03/23 14:53	1
Butyl acrylate	0.22		0.050	0.011	mg/L			03/03/23 21:14	5

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Date Collected: 03/01/23 13:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/03/23 14:53	1
2-Ethylhexyl acrylate	0.22		0.050	0.017	mg/L			03/03/23 21:14	5

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	100		78 - 122			03/03/23 14:53	03/03/23 14:53	1
<i>Toluene-d8 (Surr)</i>	97		78 - 122			03/03/23 21:14	03/03/23 21:14	5
<i>Dibromofluoromethane (Surr)</i>	111		73 - 120			03/03/23 14:53	03/03/23 14:53	1
<i>Dibromofluoromethane (Surr)</i>	104		73 - 120			03/03/23 21:14	03/03/23 21:14	5
<i>4-Bromofluorobenzene (Surr)</i>	106		56 - 136			03/03/23 14:53	03/03/23 14:53	1
<i>4-Bromofluorobenzene (Surr)</i>	96		56 - 136			03/03/23 21:14	03/03/23 21:14	5
<i>1,2-Dichloroethane-d4 (Surr)</i>	106		62 - 137			03/03/23 14:53	03/03/23 14:53	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	99		62 - 137			03/03/23 21:14	03/03/23 21:14	5

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.40	0.20	mg/L		03/02/23 08:54	03/08/23 12:54	400
bis (2-chloroisopropyl) ether	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4,5-Trichlorophenol	ND		2.0	0.79	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4,6-Trichlorophenol	ND		2.0	0.72	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4-Dichlorophenol	ND		0.80	0.10	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4-Dimethylphenol	ND		0.80	0.21	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4-Dinitrophenol	ND		4.0	2.5	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,4-Dinitrotoluene	ND		2.0	0.83	mg/L		03/02/23 08:54	03/08/23 12:54	400
2,6-Dinitrotoluene	ND		2.0	0.85	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Chloronaphthalene	ND		0.40	0.19	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Chlorophenol	ND		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Methylnaphthalene	ND		0.080	0.044	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Methylphenol	ND		0.40	0.084	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Nitroaniline	ND		0.80	0.20	mg/L		03/02/23 08:54	03/08/23 12:54	400
2-Nitrophenol	ND		0.80	0.23	mg/L		03/02/23 08:54	03/08/23 12:54	400
3,3'-Dichlorobenzidine	ND		2.0	0.46	mg/L		03/02/23 08:54	03/08/23 12:54	400
3-Nitroaniline	ND		0.80	0.23	mg/L		03/02/23 08:54	03/08/23 12:54	400
4,6-Dinitro-2-methylphenol	ND		2.0	1.1	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Bromophenyl phenyl ether	ND		0.80	0.20	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Chloro-3-methylphenol	ND		0.80	0.12	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Chloroaniline	ND		0.80	0.13	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Chlorophenyl phenyl ether	ND		0.80	0.22	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Nitroaniline	ND		0.80	0.37	mg/L		03/02/23 08:54	03/08/23 12:54	400
4-Nitrophenol	ND		4.0	0.87	mg/L		03/02/23 08:54	03/08/23 12:54	400
Acenaphthene	ND		0.080	0.069	mg/L		03/02/23 08:54	03/08/23 12:54	400
Acenaphthylene	ND		0.080	0.050	mg/L		03/02/23 08:54	03/08/23 12:54	400
Acetophenone	ND		0.40	0.15	mg/L		03/02/23 08:54	03/08/23 12:54	400
Anthracene	ND		0.080	0.054	mg/L		03/02/23 08:54	03/08/23 12:54	400
Atrazine	ND		0.80	0.38	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzaldehyde	ND		0.80	0.30	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzo[a]anthracene	ND		0.080	0.068	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzo[a]pyrene	ND		0.080	0.069	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzo[b]fluoranthene	ND		0.080	0.062	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzo[g,h,i]perylene	ND		0.080	0.071	mg/L		03/02/23 08:54	03/08/23 12:54	400
Benzo[k]fluoranthene	ND		0.080	0.056	mg/L		03/02/23 08:54	03/08/23 12:54	400

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Date Collected: 03/01/23 13:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.40	0.18	mg/L		03/02/23 08:54	03/08/23 12:54	400
Bis(2-chloroethyl)ether	ND		0.40	0.16	mg/L		03/02/23 08:54	03/08/23 12:54	400
Bis(2-ethylhexyl) phthalate	ND		2.0	0.89	mg/L		03/02/23 08:54	03/08/23 12:54	400
Butyl benzyl phthalate	ND		0.80	0.27	mg/L		03/02/23 08:54	03/08/23 12:54	400
Caprolactam	ND		2.0	0.37	mg/L		03/02/23 08:54	03/08/23 12:54	400
Carbazole	ND		0.40	0.20	mg/L		03/02/23 08:54	03/08/23 12:54	400
Chrysene	ND		0.080	0.074	mg/L		03/02/23 08:54	03/08/23 12:54	400
Dibenz(a,h)anthracene	ND		0.080	0.060	mg/L		03/02/23 08:54	03/08/23 12:54	400
Dibenzofuran	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 12:54	400
Diethyl phthalate	ND		2.0	1.5	mg/L		03/02/23 08:54	03/08/23 12:54	400
Dimethyl phthalate	ND		0.80	0.21	mg/L		03/02/23 08:54	03/08/23 12:54	400
Di-n-butyl phthalate	ND		2.0	0.72	mg/L		03/02/23 08:54	03/08/23 12:54	400
Di-n-octyl phthalate	ND		0.80	0.33	mg/L		03/02/23 08:54	03/08/23 12:54	400
Fluoranthene	ND		0.080	0.064	mg/L		03/02/23 08:54	03/08/23 12:54	400
Fluorene	ND		0.080	0.068	mg/L		03/02/23 08:54	03/08/23 12:54	400
Hexachlorobenzene	ND		0.080	0.064	mg/L		03/02/23 08:54	03/08/23 12:54	400
Hexachlorobutadiene	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 12:54	400
Hexachlorocyclopentadiene	ND		4.0	0.70	mg/L		03/02/23 08:54	03/08/23 12:54	400
Hexachloroethane	ND		0.40	0.16	mg/L		03/02/23 08:54	03/08/23 12:54	400
Indeno[1,2,3-cd]pyrene	ND		0.080	0.054	mg/L		03/02/23 08:54	03/08/23 12:54	400
Isophorone	ND		0.40	0.13	mg/L		03/02/23 08:54	03/08/23 12:54	400
N-Nitrosodi-n-propylamine	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 12:54	400
N-Nitrosodiphenylamine	ND		0.40	0.18	mg/L		03/02/23 08:54	03/08/23 12:54	400
Naphthalene	ND		0.080	0.044	mg/L		03/02/23 08:54	03/08/23 12:54	400
Nitrobenzene	ND		0.40	0.21	mg/L		03/02/23 08:54	03/08/23 12:54	400
Pentachlorophenol	ND		4.0	1.2	mg/L		03/02/23 08:54	03/08/23 12:54	400
Phenanthrene	ND		0.080	0.067	mg/L		03/02/23 08:54	03/08/23 12:54	400
Phenol	ND		0.40	0.051	mg/L		03/02/23 08:54	03/08/23 12:54	400
Pyrene	ND		0.080	0.070	mg/L		03/02/23 08:54	03/08/23 12:54	400
3 & 4 Methylphenol	ND		0.80	0.076	mg/L		03/02/23 08:54	03/08/23 12:54	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/02/23 08:54	03/08/23 12:54	400
Phenol-d5 (Surr)	0	S1-	26 - 120	03/02/23 08:54	03/08/23 12:54	400
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/02/23 08:54	03/08/23 12:54	400
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/02/23 08:54	03/08/23 12:54	400
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/02/23 08:54	03/08/23 12:54	400
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/02/23 08:54	03/08/23 12:54	400

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butoxyethanol	12		4.0	1.1	mg/L		03/02/23 08:54	03/09/23 08:27	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/02/23 08:54	03/09/23 08:27	1000
Phenol-d5 (Surr)	0	S1-	26 - 120	03/02/23 08:54	03/09/23 08:27	1000
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/02/23 08:54	03/09/23 08:27	1000
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/02/23 08:54	03/09/23 08:27	1000
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/02/23 08:54	03/09/23 08:27	1000
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/02/23 08:54	03/09/23 08:27	1000

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Date Collected: 03/01/23 13:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	1900	B	490	67	ug/L		03/06/23 07:59	03/06/23 11:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	48	S1-	52 - 121				03/06/23 07:59	03/06/23 11:29	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 12:45	1
Barium	0.037	J B	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 12:45	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 12:45	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 12:45	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 12:45	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 12:45	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 12:45	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/03/23 10:20	1
Total Suspended Solids (SM 2540D-2015)	23		5.1	1.3	mg/L			03/03/23 10:03	1
Total Organic Carbon (SM 5310 C-2014)	49		5.0	1.7	mg/L			03/03/23 12:15	5
corrosivity by pH (SW846 9040C)	7.9	HF	0.1	0.1	SU			03/03/23 08:59	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Date Collected: 03/01/23 13:25

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 23:04	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 23:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 23:04	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 23:04	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 23:04	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 23:04	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 23:04	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 23:04	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 23:04	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 23:04	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 23:04	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 23:04	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 23:04	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 23:04	1
2-Butanone (MEK)	0.0032	J	0.010	0.0012	mg/L			03/02/23 23:04	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 23:04	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 23:04	1
Acetone	0.014		0.010	0.0054	mg/L			03/02/23 23:04	1
Benzene	0.0016		0.0010	0.00042	mg/L			03/02/23 23:04	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 23:04	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 23:04	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 23:04	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 23:04	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 23:04	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 23:04	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 23:04	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 23:04	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 23:04	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 23:04	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 23:04	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 23:04	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 23:04	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 23:04	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 23:04	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 23:04	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 23:04	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 23:04	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 23:04	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 23:04	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 23:04	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 23:04	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 23:04	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 23:04	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 23:04	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 23:04	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 23:04	1
Vinyl chloride	0.0046		0.0010	0.00045	mg/L			03/02/23 23:04	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 23:04	1
Butyl acrylate	0.47		0.10	0.023	mg/L			03/02/23 17:31	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Date Collected: 03/01/23 13:25

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	0.0014	J	0.0020	0.00062	mg/L			03/02/23 23:04	1
2-Ethylhexyl acrylate	0.18		0.10	0.033	mg/L			03/02/23 17:31	10

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		78 - 122				03/02/23 17:31	03/02/23 17:31	10
Toluene-d8 (Surr)	102		78 - 122				03/02/23 23:04	03/02/23 23:04	1
Dibromofluoromethane (Surr)	105		73 - 120				03/02/23 17:31	03/02/23 17:31	10
Dibromofluoromethane (Surr)	110		73 - 120				03/02/23 23:04	03/02/23 23:04	1
4-Bromofluorobenzene (Surr)	92		56 - 136				03/02/23 17:31	03/02/23 17:31	10
4-Bromofluorobenzene (Surr)	101		56 - 136				03/02/23 23:04	03/02/23 23:04	1
1,2-Dichloroethane-d4 (Surr)	99		62 - 137				03/02/23 17:31	03/02/23 17:31	10
1,2-Dichloroethane-d4 (Surr)	102		62 - 137				03/02/23 23:04	03/02/23 23:04	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.20	0.098	mg/L		03/02/23 08:54	03/08/23 13:18	200
bis (2-chloroisopropyl) ether	ND		0.20	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4,5-Trichlorophenol	ND		1.0	0.40	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4,6-Trichlorophenol	ND		1.0	0.36	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4-Dichlorophenol	ND		0.40	0.052	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4-Dimethylphenol	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4-Dinitrophenol	ND		2.0	1.2	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,4-Dinitrotoluene	ND		1.0	0.41	mg/L		03/02/23 08:54	03/08/23 13:18	200
2,6-Dinitrotoluene	ND		1.0	0.43	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Chloronaphthalene	ND		0.20	0.097	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Chlorophenol	ND		0.20	0.055	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Methylnaphthalene	ND		0.040	0.022	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Methylphenol	ND		0.20	0.042	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Nitroaniline	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Nitrophenol	ND		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
3,3'-Dichlorobenzidine	ND		1.0	0.23	mg/L		03/02/23 08:54	03/08/23 13:18	200
3-Nitroaniline	ND		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
4,6-Dinitro-2-methylphenol	ND		1.0	0.56	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Bromophenyl phenyl ether	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Chloro-3-methylphenol	ND		0.40	0.059	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Chloroaniline	ND		0.40	0.063	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Chlorophenyl phenyl ether	ND		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Nitroaniline	ND		0.40	0.18	mg/L		03/02/23 08:54	03/08/23 13:18	200
4-Nitrophenol	ND		2.0	0.43	mg/L		03/02/23 08:54	03/08/23 13:18	200
Acenaphthene	ND		0.040	0.034	mg/L		03/02/23 08:54	03/08/23 13:18	200
Acenaphthylene	ND		0.040	0.025	mg/L		03/02/23 08:54	03/08/23 13:18	200
Acetophenone	ND		0.20	0.073	mg/L		03/02/23 08:54	03/08/23 13:18	200
Anthracene	ND		0.040	0.027	mg/L		03/02/23 08:54	03/08/23 13:18	200
Atrazine	ND		0.40	0.19	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzaldehyde	ND		0.40	0.15	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzo[a]anthracene	ND		0.040	0.034	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzo[a]pyrene	ND		0.040	0.035	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzo[b]fluoranthene	ND		0.040	0.031	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzo[g,h,i]perylene	ND		0.040	0.036	mg/L		03/02/23 08:54	03/08/23 13:18	200
Benzo[k]fluoranthene	ND		0.040	0.028	mg/L		03/02/23 08:54	03/08/23 13:18	200

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Date Collected: 03/01/23 13:25

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.20	0.091	mg/L		03/02/23 08:54	03/08/23 13:18	200
Bis(2-chloroethyl)ether	ND		0.20	0.080	mg/L		03/02/23 08:54	03/08/23 13:18	200
Bis(2-ethylhexyl) phthalate	ND		1.0	0.44	mg/L		03/02/23 08:54	03/08/23 13:18	200
Butyl benzyl phthalate	ND		0.40	0.13	mg/L		03/02/23 08:54	03/08/23 13:18	200
Caprolactam	ND		1.0	0.19	mg/L		03/02/23 08:54	03/08/23 13:18	200
Carbazole	ND		0.20	0.098	mg/L		03/02/23 08:54	03/08/23 13:18	200
Chrysene	ND		0.040	0.037	mg/L		03/02/23 08:54	03/08/23 13:18	200
Dibenz(a,h)anthracene	ND		0.040	0.030	mg/L		03/02/23 08:54	03/08/23 13:18	200
Dibenzofuran	ND		0.20	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
Diethyl phthalate	ND		1.0	0.76	mg/L		03/02/23 08:54	03/08/23 13:18	200
Dimethyl phthalate	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 13:18	200
Di-n-butyl phthalate	ND		1.0	0.36	mg/L		03/02/23 08:54	03/08/23 13:18	200
Di-n-octyl phthalate	ND		0.40	0.16	mg/L		03/02/23 08:54	03/08/23 13:18	200
Fluoranthene	ND		0.040	0.032	mg/L		03/02/23 08:54	03/08/23 13:18	200
Fluorene	ND		0.040	0.034	mg/L		03/02/23 08:54	03/08/23 13:18	200
Hexachlorobenzene	ND		0.040	0.032	mg/L		03/02/23 08:54	03/08/23 13:18	200
Hexachlorobutadiene	ND		0.20	0.11	mg/L		03/02/23 08:54	03/08/23 13:18	200
Hexachlorocyclopentadiene	ND		2.0	0.35	mg/L		03/02/23 08:54	03/08/23 13:18	200
Hexachloroethane	ND		0.20	0.079	mg/L		03/02/23 08:54	03/08/23 13:18	200
Indeno[1,2,3-cd]pyrene	ND		0.040	0.027	mg/L		03/02/23 08:54	03/08/23 13:18	200
Isophorone	ND		0.20	0.065	mg/L		03/02/23 08:54	03/08/23 13:18	200
N-Nitrosodi-n-propylamine	ND		0.20	0.051	mg/L		03/02/23 08:54	03/08/23 13:18	200
N-Nitrosodiphenylamine	ND		0.20	0.088	mg/L		03/02/23 08:54	03/08/23 13:18	200
Naphthalene	ND		0.040	0.022	mg/L		03/02/23 08:54	03/08/23 13:18	200
Nitrobenzene	ND		0.20	0.10	mg/L		03/02/23 08:54	03/08/23 13:18	200
Pentachlorophenol	ND		2.0	0.62	mg/L		03/02/23 08:54	03/08/23 13:18	200
Phenanthrene	ND		0.040	0.033	mg/L		03/02/23 08:54	03/08/23 13:18	200
Phenol	ND		0.20	0.026	mg/L		03/02/23 08:54	03/08/23 13:18	200
Pyrene	ND		0.040	0.035	mg/L		03/02/23 08:54	03/08/23 13:18	200
3 & 4 Methylphenol	ND		0.40	0.038	mg/L		03/02/23 08:54	03/08/23 13:18	200
2-Butoxyethanol	5.4		0.80	0.21	mg/L		03/02/23 08:54	03/08/23 13:18	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/02/23 08:54	03/08/23 13:18	200
Phenol-d5 (Surr)	0	S1-	26 - 120	03/02/23 08:54	03/08/23 13:18	200
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/02/23 08:54	03/08/23 13:18	200
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/02/23 08:54	03/08/23 13:18	200
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/02/23 08:54	03/08/23 13:18	200
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/02/23 08:54	03/08/23 13:18	200

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	2000	B	490	67	ug/L		03/06/23 07:59	03/06/23 11:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	63		52 - 121	03/06/23 07:59	03/06/23 11:57	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 12:49	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Date Collected: 03/01/23 13:25

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.044	J B	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 12:49	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 12:49	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 12:49	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 12:49	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 12:49	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 12:49	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/03/23 10:52	1
Total Suspended Solids (SM 2540D-2015)	23		4.3	1.1	mg/L			03/03/23 10:03	1
Total Organic Carbon (SM 5310 C-2014)	140		10	3.5	mg/L			03/03/23 12:29	10
corrosivity by pH (SW846 9040C)	7.9	HF	0.1	0.1	SU			03/03/23 09:06	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Date Collected: 03/01/23 13:35

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 23:27	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 23:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 23:27	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 23:27	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 23:27	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 23:27	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 23:27	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 23:27	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 23:27	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 23:27	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 23:27	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 23:27	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 23:27	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 23:27	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/02/23 23:27	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 23:27	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 23:27	1
Acetone	ND		0.010	0.0054	mg/L			03/02/23 23:27	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 23:27	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 23:27	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 23:27	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 23:27	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 23:27	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 23:27	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 23:27	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 23:27	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 23:27	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 23:27	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 23:27	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 23:27	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 23:27	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 23:27	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 23:27	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 23:27	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 23:27	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 23:27	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 23:27	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 23:27	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 23:27	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 23:27	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 23:27	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 23:27	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 23:27	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 23:27	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 23:27	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 23:27	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 23:27	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 23:27	1
Butyl acrylate	0.24		0.040	0.0092	mg/L			03/03/23 14:06	4

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Date Collected: 03/01/23 13:35

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	0.00097	J	0.0020	0.00062	mg/L			03/02/23 23:27	1
2-Ethylhexyl acrylate	0.046		0.040	0.013	mg/L			03/03/23 14:06	4

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		78 - 122					03/02/23 23:27	1
Toluene-d8 (Surr)	102		78 - 122					03/03/23 14:06	4
Dibromofluoromethane (Surr)	112		73 - 120					03/02/23 23:27	1
Dibromofluoromethane (Surr)	113		73 - 120					03/03/23 14:06	4
4-Bromofluorobenzene (Surr)	103		56 - 136					03/02/23 23:27	1
4-Bromofluorobenzene (Surr)	100		56 - 136					03/03/23 14:06	4
1,2-Dichloroethane-d4 (Surr)	106		62 - 137					03/02/23 23:27	1
1,2-Dichloroethane-d4 (Surr)	109		62 - 137					03/03/23 14:06	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.40	0.20	mg/L		03/02/23 08:54	03/08/23 13:41	400
bis (2-chloroisopropyl) ether	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4,5-Trichlorophenol	ND		2.0	0.79	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4,6-Trichlorophenol	ND		2.0	0.72	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4-Dichlorophenol	ND		0.80	0.10	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4-Dimethylphenol	ND		0.80	0.21	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4-Dinitrophenol	ND		4.0	2.5	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,4-Dinitrotoluene	ND		2.0	0.83	mg/L		03/02/23 08:54	03/08/23 13:41	400
2,6-Dinitrotoluene	ND		2.0	0.85	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Chloronaphthalene	ND		0.40	0.19	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Chlorophenol	ND		0.40	0.11	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Methylnaphthalene	ND		0.080	0.044	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Methylphenol	ND		0.40	0.084	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Nitroaniline	ND		0.80	0.20	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Nitrophenol	ND		0.80	0.23	mg/L		03/02/23 08:54	03/08/23 13:41	400
3,3'-Dichlorobenzidine	ND		2.0	0.46	mg/L		03/02/23 08:54	03/08/23 13:41	400
3-Nitroaniline	ND		0.80	0.23	mg/L		03/02/23 08:54	03/08/23 13:41	400
4,6-Dinitro-2-methylphenol	ND		2.0	1.1	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Bromophenyl phenyl ether	ND		0.80	0.20	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Chloro-3-methylphenol	ND		0.80	0.12	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Chloroaniline	ND		0.80	0.13	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Chlorophenyl phenyl ether	ND		0.80	0.22	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Nitroaniline	ND		0.80	0.37	mg/L		03/02/23 08:54	03/08/23 13:41	400
4-Nitrophenol	ND		4.0	0.87	mg/L		03/02/23 08:54	03/08/23 13:41	400
Acenaphthene	ND		0.080	0.069	mg/L		03/02/23 08:54	03/08/23 13:41	400
Acenaphthylene	ND		0.080	0.050	mg/L		03/02/23 08:54	03/08/23 13:41	400
Acetophenone	ND		0.40	0.15	mg/L		03/02/23 08:54	03/08/23 13:41	400
Anthracene	ND		0.080	0.054	mg/L		03/02/23 08:54	03/08/23 13:41	400
Atrazine	ND		0.80	0.38	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzaldehyde	ND		0.80	0.30	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzo[a]anthracene	ND		0.080	0.068	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzo[a]pyrene	ND		0.080	0.069	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzo[b]fluoranthene	ND		0.080	0.062	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzo[g,h,i]perylene	ND		0.080	0.071	mg/L		03/02/23 08:54	03/08/23 13:41	400
Benzo[k]fluoranthene	ND		0.080	0.056	mg/L		03/02/23 08:54	03/08/23 13:41	400

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Date Collected: 03/01/23 13:35

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	ND		0.40	0.18	mg/L		03/02/23 08:54	03/08/23 13:41	400
Bis(2-chloroethyl)ether	ND		0.40	0.16	mg/L		03/02/23 08:54	03/08/23 13:41	400
Bis(2-ethylhexyl) phthalate	ND		2.0	0.89	mg/L		03/02/23 08:54	03/08/23 13:41	400
Butyl benzyl phthalate	ND		0.80	0.27	mg/L		03/02/23 08:54	03/08/23 13:41	400
Caprolactam	ND		2.0	0.37	mg/L		03/02/23 08:54	03/08/23 13:41	400
Carbazole	ND		0.40	0.20	mg/L		03/02/23 08:54	03/08/23 13:41	400
Chrysene	ND		0.080	0.074	mg/L		03/02/23 08:54	03/08/23 13:41	400
Dibenz(a,h)anthracene	ND		0.080	0.060	mg/L		03/02/23 08:54	03/08/23 13:41	400
Dibenzofuran	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 13:41	400
Diethyl phthalate	ND		2.0	1.5	mg/L		03/02/23 08:54	03/08/23 13:41	400
Dimethyl phthalate	ND		0.80	0.21	mg/L		03/02/23 08:54	03/08/23 13:41	400
Di-n-butyl phthalate	ND		2.0	0.72	mg/L		03/02/23 08:54	03/08/23 13:41	400
Di-n-octyl phthalate	ND		0.80	0.33	mg/L		03/02/23 08:54	03/08/23 13:41	400
Fluoranthene	ND		0.080	0.064	mg/L		03/02/23 08:54	03/08/23 13:41	400
Fluorene	ND		0.080	0.068	mg/L		03/02/23 08:54	03/08/23 13:41	400
Hexachlorobenzene	ND		0.080	0.064	mg/L		03/02/23 08:54	03/08/23 13:41	400
Hexachlorobutadiene	ND		0.40	0.22	mg/L		03/02/23 08:54	03/08/23 13:41	400
Hexachlorocyclopentadiene	ND		4.0	0.70	mg/L		03/02/23 08:54	03/08/23 13:41	400
Hexachloroethane	ND		0.40	0.16	mg/L		03/02/23 08:54	03/08/23 13:41	400
Indeno[1,2,3-cd]pyrene	ND		0.080	0.054	mg/L		03/02/23 08:54	03/08/23 13:41	400
Isophorone	ND		0.40	0.13	mg/L		03/02/23 08:54	03/08/23 13:41	400
N-Nitrosodi-n-propylamine	ND		0.40	0.10	mg/L		03/02/23 08:54	03/08/23 13:41	400
N-Nitrosodiphenylamine	ND		0.40	0.18	mg/L		03/02/23 08:54	03/08/23 13:41	400
Naphthalene	ND		0.080	0.044	mg/L		03/02/23 08:54	03/08/23 13:41	400
Nitrobenzene	ND		0.40	0.21	mg/L		03/02/23 08:54	03/08/23 13:41	400
Pentachlorophenol	ND		4.0	1.2	mg/L		03/02/23 08:54	03/08/23 13:41	400
Phenanthrene	ND		0.080	0.067	mg/L		03/02/23 08:54	03/08/23 13:41	400
Phenol	ND		0.40	0.051	mg/L		03/02/23 08:54	03/08/23 13:41	400
Pyrene	ND		0.080	0.070	mg/L		03/02/23 08:54	03/08/23 13:41	400
3 & 4 Methylphenol	ND		0.80	0.076	mg/L		03/02/23 08:54	03/08/23 13:41	400
2-Butoxyethanol	11		1.6	0.42	mg/L		03/02/23 08:54	03/08/23 13:41	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/02/23 08:54	03/08/23 13:41	400
Phenol-d5 (Surr)	0	S1-	26 - 120	03/02/23 08:54	03/08/23 13:41	400
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/02/23 08:54	03/08/23 13:41	400
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/02/23 08:54	03/08/23 13:41	400
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/02/23 08:54	03/08/23 13:41	400
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/02/23 08:54	03/08/23 13:41	400

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	2000	B	490	67	ug/L		03/06/23 07:59	03/06/23 12:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		52 - 121	03/06/23 07:59	03/06/23 12:24	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 12:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Date Collected: 03/01/23 13:35

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.038	J B	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 12:54	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 12:54	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 12:54	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 12:54	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 12:54	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 12:54	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/03/23 11:23	1
Total Suspended Solids (SM 2540D-2015)	13		4.0	1.0	mg/L			03/03/23 10:03	1
Total Organic Carbon (SM 5310 C-2014)	20		1.0	0.35	mg/L			03/03/23 11:22	1
corrosivity by pH (SW846 9040C)	7.5	HF	0.1	0.1	SU			03/03/23 09:11	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 01

Lab Sample ID: 240-181183-6

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 15:55	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 15:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 15:55	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 15:55	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 15:55	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 15:55	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 15:55	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 15:55	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 15:55	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 15:55	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 15:55	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 15:55	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 15:55	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 15:55	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/02/23 15:55	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 15:55	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 15:55	1
Acetone	ND		0.010	0.0054	mg/L			03/02/23 15:55	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 15:55	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 15:55	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 15:55	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 15:55	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 15:55	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 15:55	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 15:55	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 15:55	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 15:55	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 15:55	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 15:55	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 15:55	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 15:55	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 15:55	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 15:55	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 15:55	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 15:55	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 15:55	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 15:55	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 15:55	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 15:55	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 15:55	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 15:55	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 15:55	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 15:55	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 15:55	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 15:55	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 15:55	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 15:55	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 15:55	1
Butyl acrylate	ND		0.010	0.0023	mg/L			03/02/23 15:55	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 01
Date Collected: 03/01/23 00:00
Date Received: 03/01/23 20:00

Lab Sample ID: 240-181183-6
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/02/23 15:55	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/02/23 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		78 - 122		03/02/23 15:55	1
<i>Dibromofluoromethane (Surr)</i>	108		73 - 120		03/02/23 15:55	1
<i>4-Bromofluorobenzene (Surr)</i>	88		56 - 136		03/02/23 15:55	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	103		62 - 137		03/02/23 15:55	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 02

Lab Sample ID: 240-181183-7

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 16:19	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 16:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 16:19	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 16:19	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 16:19	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 16:19	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 16:19	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 16:19	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 16:19	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 16:19	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 16:19	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 16:19	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 16:19	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 16:19	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/02/23 16:19	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 16:19	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 16:19	1
Acetone	ND		0.010	0.0054	mg/L			03/02/23 16:19	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 16:19	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 16:19	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 16:19	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 16:19	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 16:19	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 16:19	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 16:19	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 16:19	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 16:19	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 16:19	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 16:19	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 16:19	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 16:19	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 16:19	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 16:19	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 16:19	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 16:19	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 16:19	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 16:19	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 16:19	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 16:19	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 16:19	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 16:19	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 16:19	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 16:19	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 16:19	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 16:19	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 16:19	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 16:19	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 16:19	1
Butyl acrylate	ND		0.010	0.0023	mg/L			03/02/23 16:19	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 02
Date Collected: 03/01/23 00:00
Date Received: 03/01/23 20:00

Lab Sample ID: 240-181183-7
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/02/23 16:19	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/02/23 16:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		78 - 122		03/02/23 16:19	1
<i>Dibromofluoromethane (Surr)</i>	108		73 - 120		03/02/23 16:19	1
<i>4-Bromofluorobenzene (Surr)</i>	85		56 - 136		03/02/23 16:19	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		62 - 137		03/02/23 16:19	1



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 03

Lab Sample ID: 240-181183-8

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 17:07	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 17:07	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 17:07	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 17:07	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 17:07	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 17:07	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 17:07	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 17:07	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 17:07	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 17:07	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 17:07	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 17:07	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 17:07	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/02/23 17:07	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 17:07	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 17:07	1
Acetone	ND		0.010	0.0054	mg/L			03/02/23 17:07	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 17:07	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 17:07	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 17:07	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 17:07	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 17:07	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 17:07	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 17:07	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 17:07	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 17:07	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 17:07	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 17:07	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 17:07	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 17:07	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 17:07	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 17:07	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 17:07	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 17:07	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 17:07	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 17:07	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 17:07	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 17:07	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 17:07	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 17:07	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 17:07	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 17:07	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 17:07	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 17:07	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 17:07	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 17:07	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 17:07	1
Butyl acrylate	ND		0.010	0.0023	mg/L			03/02/23 17:07	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: TB - 03

Lab Sample ID: 240-181183-8

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/02/23 17:07	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/02/23 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	95		78 - 122		03/02/23 17:07	1
<i>Dibromofluoromethane (Surr)</i>	106		73 - 120		03/02/23 17:07	1
<i>4-Bromofluorobenzene (Surr)</i>	84		56 - 136		03/02/23 17:07	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		62 - 137		03/02/23 17:07	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-181183-1	WC - 257204 - BLUE BLDG WE	103	111	106	103
240-181183-1	WC - 257204 - BLUE BLDG WEST	95	106	95	103
240-181183-2	WC - 251060 - BLUE BLDG EAST	95	105	93	99
240-181183-2	WC - 251060 - BLUE BLDG EAST	99	111	106	100
240-181183-2	WC - 251060 - BLUE BLDG EAST	99	111	98	106
240-181183-3	WC - 251079 - CLARK	100	111	106	106
240-181183-3	WC - 251079 - CLARK	97	104	96	99
240-181183-4	WC - 251633 - PLEASANT	95	105	92	99
240-181183-4	WC - 251633 - PLEASANT	102	110	101	102
240-181183-5	WC - 251478 - GAS STATION	100	112	103	106
240-181183-5	WC - 251478 - GAS STATION	102	113	100	109
240-181183-6	TB - 01	96	108	88	103
240-181183-7	TB - 02	96	108	85	100
240-181183-8	TB - 03	95	106	84	101
LCS 240-564039/5	Lab Control Sample	104	102	100	99
LCS 240-564039/6	Lab Control Sample	97	104	98	101
LCS 240-564153/5	Lab Control Sample	108	107	103	101
LCS 240-564153/6	Lab Control Sample	100	107	101	103
MB 240-564039/8	Method Blank	97	106	88	103
MB 240-564153/8	Method Blank	100	113	93	110

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181183-1	WC - 257204 - BLUE BLDG WE	74	47	65	54	67	55
240-181183-1 - RA	WC - 257204 - BLUE BLDG WEST	77	51	63	47	87	34
240-181183-2	WC - 251060 - BLUE BLDG EAST	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-181183-3	WC - 251079 - CLARK	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-181183-3 - RA	WC - 251079 - CLARK	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-181183-4	WC - 251633 - PLEASANT	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-181183-5	WC - 251478 - GAS STATION	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
LCS 240-563981/20-A	Lab Control Sample	109	65	79	111	80	85
LCS 240-563981/22-A	Lab Control Sample	96	35	60	58	69	49
MB 240-563981/19-A	Method Blank	103	54	70	66	80	58

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTPH (52-121)
240-181183-1	WC - 257204 - BLUE BLDG WE	69
240-181183-2	WC - 251060 - BLUE BLDG EAST	71
240-181183-3	WC - 251079 - CLARK	48 S1-
240-181183-4	WC - 251633 - PLEASANT	63
240-181183-5	WC - 251478 - GAS STATION	67
LCS 240-564322/2-A	Lab Control Sample	87
MB 240-564322/1-A	Method Blank	72

Surrogate Legend

OTPH = o-Terphenyl

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-564039/8
Matrix: Water
Analysis Batch: 564039

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 15:31	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/02/23 15:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/02/23 15:31	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/02/23 15:31	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/02/23 15:31	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/02/23 15:31	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/02/23 15:31	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/02/23 15:31	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/02/23 15:31	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/02/23 15:31	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/02/23 15:31	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/02/23 15:31	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/02/23 15:31	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/02/23 15:31	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/02/23 15:31	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/02/23 15:31	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/02/23 15:31	1
Acetone	ND		0.010	0.0054	mg/L			03/02/23 15:31	1
Benzene	ND		0.0010	0.00042	mg/L			03/02/23 15:31	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/02/23 15:31	1
Bromoform	ND		0.0010	0.00076	mg/L			03/02/23 15:31	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/02/23 15:31	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/02/23 15:31	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/02/23 15:31	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/02/23 15:31	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/02/23 15:31	1
Chloroform	ND		0.0010	0.00047	mg/L			03/02/23 15:31	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/02/23 15:31	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/02/23 15:31	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/02/23 15:31	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/02/23 15:31	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/02/23 15:31	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/02/23 15:31	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/02/23 15:31	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/02/23 15:31	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/02/23 15:31	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/02/23 15:31	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/02/23 15:31	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/02/23 15:31	1
Styrene	ND		0.0010	0.00045	mg/L			03/02/23 15:31	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/02/23 15:31	1
Toluene	ND		0.0010	0.00044	mg/L			03/02/23 15:31	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/02/23 15:31	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/02/23 15:31	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/02/23 15:31	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/02/23 15:31	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/02/23 15:31	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/02/23 15:31	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564039/8
Matrix: Water
Analysis Batch: 564039

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butyl acrylate	ND		0.010	0.0023	mg/L			03/02/23 15:31	1
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/02/23 15:31	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/02/23 15:31	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	97		78 - 122		03/02/23 15:31	1
Dibromofluoromethane (Surr)	106		73 - 120		03/02/23 15:31	1
4-Bromofluorobenzene (Surr)	88		56 - 136		03/02/23 15:31	1
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		03/02/23 15:31	1

Lab Sample ID: LCS 240-564039/5
Matrix: Water
Analysis Batch: 564039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0249		mg/L		99	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0270		mg/L		108	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0267		mg/L		107	51 - 146
1,1,2-Trichloroethane	0.0250	0.0259		mg/L		103	70 - 138
1,1-Dichloroethane	0.0250	0.0236		mg/L		94	72 - 127
1,1-Dichloroethene	0.0250	0.0255		mg/L		102	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0271		mg/L		108	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0247		mg/L		99	53 - 135
Ethylene Dibromide	0.0250	0.0252		mg/L		101	71 - 134
1,2-Dichlorobenzene	0.0250	0.0267		mg/L		107	78 - 120
1,2-Dichloroethane	0.0250	0.0238		mg/L		95	66 - 128
1,2-Dichloropropane	0.0250	0.0245		mg/L		98	75 - 133
1,3-Dichlorobenzene	0.0250	0.0264		mg/L		106	80 - 120
1,4-Dichlorobenzene	0.0250	0.0262		mg/L		105	80 - 120
2-Butanone (MEK)	0.0500	0.0512		mg/L		102	54 - 156
2-Hexanone	0.0500	0.0571		mg/L		114	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0561		mg/L		112	46 - 158
Acetone	0.0500	0.0529		mg/L		106	50 - 149
Benzene	0.0250	0.0253		mg/L		101	77 - 123
Dichlorobromomethane	0.0250	0.0243		mg/L		97	69 - 126
Bromoform	0.0250	0.0255		mg/L		102	57 - 129
Bromomethane	0.0125	0.0166		mg/L		133	36 - 142
Carbon disulfide	0.0250	0.0247		mg/L		99	43 - 140
Carbon tetrachloride	0.0250	0.0251		mg/L		100	55 - 137
Chlorobenzene	0.0250	0.0260		mg/L		104	80 - 121
Chloroethane	0.0125	0.0119		mg/L		95	38 - 152
Chloroform	0.0250	0.0240		mg/L		96	74 - 122
Chloromethane	0.0125	0.0145		mg/L		116	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0244		mg/L		98	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0244		mg/L		98	64 - 130
Cyclohexane	0.0250	0.0273		mg/L		109	58 - 146
Chlorodibromomethane	0.0250	0.0250		mg/L		100	70 - 124
Dichlorodifluoromethane	0.0125	0.0141		mg/L		113	34 - 153

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564039/5
Matrix: Water
Analysis Batch: 564039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0250	0.0259		mg/L		104	80 - 121
Isopropylbenzene	0.0250	0.0274		mg/L		110	74 - 128
Methyl acetate	0.0500	0.0450		mg/L		90	42 - 169
Methyl tert-butyl ether	0.0250	0.0246		mg/L		98	65 - 126
Methylcyclohexane	0.0250	0.0285		mg/L		114	62 - 136
Methylene Chloride	0.0250	0.0257		mg/L		103	71 - 125
Styrene	0.0250	0.0275		mg/L		110	80 - 135
Tetrachloroethene	0.0250	0.0271		mg/L		108	76 - 123
Toluene	0.0250	0.0261		mg/L		104	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0246		mg/L		98	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0252		mg/L		101	57 - 129
Trichloroethene	0.0250	0.0249		mg/L		100	70 - 122
Trichlorofluoromethane	0.0125	0.0126		mg/L		101	30 - 170
Vinyl chloride	0.0125	0.0136		mg/L		109	60 - 144
Xylenes, Total	0.0500	0.0531		mg/L		106	80 - 121
m-Xylene & p-Xylene	0.0250	0.0267		mg/L		107	80 - 120
o-Xylene	0.0250	0.0264		mg/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120
4-Bromofluorobenzene (Surr)	100		56 - 136
1,2-Dichloroethane-d4 (Surr)	99		62 - 137

Lab Sample ID: LCS 240-564039/6
Matrix: Water
Analysis Batch: 564039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	0.0250	0.0233		mg/L		93	10 - 120
Methyl acrylate	0.0250	0.0238		mg/L		95	10 - 120
2-Ethylhexyl acrylate	0.0250	0.0208		mg/L		83	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120
4-Bromofluorobenzene (Surr)	98		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: MB 240-564153/8
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 12:54	1
1,1,1,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/03/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/03/23 12:54	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/03/23 12:54	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564153/8
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/03/23 12:54	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/03/23 12:54	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/03/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/03/23 12:54	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/03/23 12:54	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/03/23 12:54	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/03/23 12:54	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/03/23 12:54	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/03/23 12:54	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/03/23 12:54	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/03/23 12:54	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/03/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/03/23 12:54	1
Acetone	ND		0.010	0.0054	mg/L			03/03/23 12:54	1
Benzene	ND		0.0010	0.00042	mg/L			03/03/23 12:54	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/03/23 12:54	1
Bromoform	ND		0.0010	0.00076	mg/L			03/03/23 12:54	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/03/23 12:54	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/03/23 12:54	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/03/23 12:54	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/03/23 12:54	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/03/23 12:54	1
Chloroform	ND		0.0010	0.00047	mg/L			03/03/23 12:54	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/03/23 12:54	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/03/23 12:54	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/03/23 12:54	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/03/23 12:54	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/03/23 12:54	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/03/23 12:54	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/03/23 12:54	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/03/23 12:54	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/03/23 12:54	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/03/23 12:54	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/03/23 12:54	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/03/23 12:54	1
Styrene	ND		0.0010	0.00045	mg/L			03/03/23 12:54	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/03/23 12:54	1
Toluene	ND		0.0010	0.00044	mg/L			03/03/23 12:54	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/03/23 12:54	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/03/23 12:54	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/03/23 12:54	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/03/23 12:54	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/03/23 12:54	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/03/23 12:54	1
Butyl acrylate	ND		0.010	0.0023	mg/L			03/03/23 12:54	1
Methyl acrylate	ND		0.0020	0.00062	mg/L			03/03/23 12:54	1
2-Ethylhexyl acrylate	ND		0.010	0.0033	mg/L			03/03/23 12:54	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564153/8
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		78 - 122		03/03/23 12:54	1
Dibromofluoromethane (Surr)	113		73 - 120		03/03/23 12:54	1
4-Bromofluorobenzene (Surr)	93		56 - 136		03/03/23 12:54	1
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		03/03/23 12:54	1

Lab Sample ID: LCS 240-564153/5
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0253		mg/L		101	64 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0272		mg/L		109	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0275		mg/L		110	51 - 146
1,1,2-Trichloroethane	0.0250	0.0262		mg/L		105	70 - 138
1,1-Dichloroethane	0.0250	0.0238		mg/L		95	72 - 127
1,1-Dichloroethene	0.0250	0.0266		mg/L		106	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0272		mg/L		109	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0250		mg/L		100	53 - 135
Ethylene Dibromide	0.0250	0.0258		mg/L		103	71 - 134
1,2-Dichlorobenzene	0.0250	0.0266		mg/L		106	78 - 120
1,2-Dichloroethane	0.0250	0.0246		mg/L		99	66 - 128
1,2-Dichloropropane	0.0250	0.0247		mg/L		99	75 - 133
1,3-Dichlorobenzene	0.0250	0.0267		mg/L		107	80 - 120
1,4-Dichlorobenzene	0.0250	0.0263		mg/L		105	80 - 120
2-Butanone (MEK)	0.0500	0.0507		mg/L		101	54 - 156
2-Hexanone	0.0500	0.0578		mg/L		116	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0574		mg/L		115	46 - 158
Acetone	0.0500	0.0524		mg/L		105	50 - 149
Benzene	0.0250	0.0258		mg/L		103	77 - 123
Dichlorobromomethane	0.0250	0.0246		mg/L		99	69 - 126
Bromoform	0.0250	0.0261		mg/L		105	57 - 129
Bromomethane	0.0125	0.0166		mg/L		133	36 - 142
Carbon disulfide	0.0250	0.0259		mg/L		104	43 - 140
Carbon tetrachloride	0.0250	0.0256		mg/L		102	55 - 137
Chlorobenzene	0.0250	0.0261		mg/L		104	80 - 121
Chloroethane	0.0125	0.0121		mg/L		97	38 - 152
Chloroform	0.0250	0.0246		mg/L		98	74 - 122
Chloromethane	0.0125	0.0137		mg/L		110	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0250		mg/L		100	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0252		mg/L		101	64 - 130
Cyclohexane	0.0250	0.0284		mg/L		114	58 - 146
Chlorodibromomethane	0.0250	0.0251		mg/L		100	70 - 124
Dichlorodifluoromethane	0.0125	0.0133		mg/L		107	34 - 153
Ethylbenzene	0.0250	0.0268		mg/L		107	80 - 121
Isopropylbenzene	0.0250	0.0280		mg/L		112	74 - 128
Methyl acetate	0.0500	0.0436		mg/L		87	42 - 169
Methyl tert-butyl ether	0.0250	0.0250		mg/L		100	65 - 126
Methylcyclohexane	0.0250	0.0297		mg/L		119	62 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564153/5
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0263		mg/L		105	71 - 125
Styrene	0.0250	0.0278		mg/L		111	80 - 135
Tetrachloroethene	0.0250	0.0277		mg/L		111	76 - 123
Toluene	0.0250	0.0265		mg/L		106	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0254		mg/L		102	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0258		mg/L		103	57 - 129
Trichloroethene	0.0250	0.0255		mg/L		102	70 - 122
Trichlorofluoromethane	0.0125	0.0121		mg/L		97	30 - 170
Vinyl chloride	0.0125	0.0129		mg/L		103	60 - 144
Xylenes, Total	0.0500	0.0534		mg/L		107	80 - 121
m-Xylene & p-Xylene	0.0250	0.0269		mg/L		108	80 - 120
o-Xylene	0.0250	0.0265		mg/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	107		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: LCS 240-564153/6
Matrix: Water
Analysis Batch: 564153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butyl acrylate	0.0250	0.0229		mg/L		91	10 - 120
Methyl acrylate	0.0250	0.0232		mg/L		93	10 - 120
2-Ethylhexyl acrylate	0.0250	0.0206		mg/L		82	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	107		73 - 120
4-Bromofluorobenzene (Surr)	101		56 - 136
1,2-Dichloroethane-d4 (Surr)	103		62 - 137

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-563981/19-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.0010	0.00049	mg/L		03/02/23 08:54	03/08/23 10:03	1
bis (2-chloroisopropyl) ether	ND		0.0010	0.00055	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,4,5-Trichlorophenol	ND		0.0050	0.0020	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,4,6-Trichlorophenol	ND		0.0050	0.0018	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,4-Dichlorophenol	ND		0.0020	0.00026	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,4-Dimethylphenol	ND		0.0020	0.00052	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,4-Dinitrophenol	ND		0.010	0.0062	mg/L		03/02/23 08:54	03/08/23 10:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563981/19-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/02/23 08:54	03/08/23 10:03	1
2,6-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Chloronaphthalene	ND		0.0010	0.00048	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Chlorophenol	ND		0.0010	0.00027	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Methylnaphthalene	ND		0.00020	0.00011	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Methylphenol	ND		0.0010	0.00021	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Nitroaniline	ND		0.0020	0.00051	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Nitrophenol	ND		0.0020	0.00056	mg/L		03/02/23 08:54	03/08/23 10:03	1
3,3'-Dichlorobenzidine	ND		0.0050	0.0012	mg/L		03/02/23 08:54	03/08/23 10:03	1
3-Nitroaniline	ND		0.0020	0.00057	mg/L		03/02/23 08:54	03/08/23 10:03	1
4,6-Dinitro-2-methylphenol	ND		0.0050	0.0028	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Bromophenyl phenyl ether	ND		0.0020	0.00050	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Chloro-3-methylphenol	ND		0.0020	0.00030	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Chloroaniline	ND		0.0020	0.00032	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Chlorophenyl phenyl ether	ND		0.0020	0.00055	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Nitroaniline	ND		0.0020	0.00092	mg/L		03/02/23 08:54	03/08/23 10:03	1
4-Nitrophenol	ND		0.010	0.0022	mg/L		03/02/23 08:54	03/08/23 10:03	1
Acenaphthene	ND		0.00020	0.00017	mg/L		03/02/23 08:54	03/08/23 10:03	1
Acenaphthylene	ND		0.00020	0.00013	mg/L		03/02/23 08:54	03/08/23 10:03	1
Acetophenone	ND		0.0010	0.00037	mg/L		03/02/23 08:54	03/08/23 10:03	1
Anthracene	ND		0.00020	0.00014	mg/L		03/02/23 08:54	03/08/23 10:03	1
Atrazine	ND		0.0020	0.00095	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzaldehyde	ND		0.0020	0.00076	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzo[a]anthracene	ND		0.00020	0.00017	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzo[a]pyrene	ND		0.00020	0.00017	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzo[b]fluoranthene	ND		0.00020	0.00015	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzo[g,h,i]perylene	ND		0.00020	0.00018	mg/L		03/02/23 08:54	03/08/23 10:03	1
Benzo[k]fluoranthene	ND		0.00020	0.00014	mg/L		03/02/23 08:54	03/08/23 10:03	1
Bis(2-chloroethoxy)methane	ND		0.0010	0.00046	mg/L		03/02/23 08:54	03/08/23 10:03	1
Bis(2-chloroethyl)ether	ND		0.0010	0.00040	mg/L		03/02/23 08:54	03/08/23 10:03	1
Bis(2-ethylhexyl) phthalate	ND		0.0050	0.0022	mg/L		03/02/23 08:54	03/08/23 10:03	1
Butyl benzyl phthalate	ND		0.0020	0.00067	mg/L		03/02/23 08:54	03/08/23 10:03	1
Caprolactam	ND		0.0050	0.00093	mg/L		03/02/23 08:54	03/08/23 10:03	1
Carbazole	ND		0.0010	0.00049	mg/L		03/02/23 08:54	03/08/23 10:03	1
Chrysene	ND		0.00020	0.00019	mg/L		03/02/23 08:54	03/08/23 10:03	1
Dibenz(a,h)anthracene	ND		0.00020	0.00015	mg/L		03/02/23 08:54	03/08/23 10:03	1
Dibenzofuran	ND		0.0010	0.00056	mg/L		03/02/23 08:54	03/08/23 10:03	1
Diethyl phthalate	ND		0.0050	0.0038	mg/L		03/02/23 08:54	03/08/23 10:03	1
Dimethyl phthalate	ND		0.0020	0.00052	mg/L		03/02/23 08:54	03/08/23 10:03	1
Di-n-butyl phthalate	ND		0.0050	0.0018	mg/L		03/02/23 08:54	03/08/23 10:03	1
Di-n-octyl phthalate	ND		0.0020	0.00082	mg/L		03/02/23 08:54	03/08/23 10:03	1
Fluoranthene	ND		0.00020	0.00016	mg/L		03/02/23 08:54	03/08/23 10:03	1
Fluorene	ND		0.00020	0.00017	mg/L		03/02/23 08:54	03/08/23 10:03	1
Hexachlorobenzene	ND		0.00020	0.00016	mg/L		03/02/23 08:54	03/08/23 10:03	1
Hexachlorobutadiene	ND		0.0010	0.00054	mg/L		03/02/23 08:54	03/08/23 10:03	1
Hexachlorocyclopentadiene	ND		0.010	0.0018	mg/L		03/02/23 08:54	03/08/23 10:03	1
Hexachloroethane	ND		0.0010	0.00040	mg/L		03/02/23 08:54	03/08/23 10:03	1
Indeno[1,2,3-cd]pyrene	ND		0.00020	0.00014	mg/L		03/02/23 08:54	03/08/23 10:03	1
Isophorone	ND		0.0010	0.00032	mg/L		03/02/23 08:54	03/08/23 10:03	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-563981/19-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 563981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	ND		0.0010	0.00025	mg/L		03/02/23 08:54	03/08/23 10:03	1
N-Nitrosodiphenylamine	ND		0.0010	0.00044	mg/L		03/02/23 08:54	03/08/23 10:03	1
Naphthalene	ND		0.00020	0.00011	mg/L		03/02/23 08:54	03/08/23 10:03	1
Nitrobenzene	ND		0.0010	0.00051	mg/L		03/02/23 08:54	03/08/23 10:03	1
Pentachlorophenol	ND		0.010	0.0031	mg/L		03/02/23 08:54	03/08/23 10:03	1
Phenanthrene	ND		0.00020	0.00017	mg/L		03/02/23 08:54	03/08/23 10:03	1
Phenol	ND		0.0010	0.00013	mg/L		03/02/23 08:54	03/08/23 10:03	1
Pyrene	ND		0.00020	0.00018	mg/L		03/02/23 08:54	03/08/23 10:03	1
3 & 4 Methylphenol	ND		0.0020	0.00019	mg/L		03/02/23 08:54	03/08/23 10:03	1
2-Butoxyethanol	ND		0.0040	0.0011	mg/L		03/02/23 08:54	03/08/23 10:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	103		46 - 137	03/02/23 08:54	03/08/23 10:03	1
Phenol-d5 (Surr)	54		26 - 120	03/02/23 08:54	03/08/23 10:03	1
Nitrobenzene-d5 (Surr)	70		24 - 120	03/02/23 08:54	03/08/23 10:03	1
2-Fluorophenol (Surr)	66		19 - 120	03/02/23 08:54	03/08/23 10:03	1
2-Fluorobiphenyl (Surr)	80		33 - 120	03/02/23 08:54	03/08/23 10:03	1
2,4,6-Tribromophenol (Surr)	58		10 - 120	03/02/23 08:54	03/08/23 10:03	1

Lab Sample ID: LCS 240-563981/20-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563981

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1'-Biphenyl	0.0320	0.0244		mg/L		76	48 - 120
bis (2-chloroisopropyl) ether	0.0320	0.0205		mg/L		64	41 - 120
2,4,5-Trichlorophenol	0.0320	0.0302		mg/L		94	52 - 123
2,4,6-Trichlorophenol	0.0320	0.0259		mg/L		81	51 - 120
2,4-Dichlorophenol	0.0320	0.0299		mg/L		93	53 - 120
2,4-Dimethylphenol	0.0320	0.0228		mg/L		71	44 - 120
2,4-Dinitrophenol	0.0640	0.0385		mg/L		60	11 - 139
2,4-Dinitrotoluene	0.0320	0.0279		mg/L		87	58 - 125
2,6-Dinitrotoluene	0.0320	0.0284		mg/L		89	54 - 132
2-Chloronaphthalene	0.0320	0.0255		mg/L		80	51 - 120
2-Chlorophenol	0.0320	0.0266		mg/L		83	46 - 120
2-Methylnaphthalene	0.0320	0.0250		mg/L		78	49 - 120
2-Methylphenol	0.0320	0.0230		mg/L		72	45 - 120
2-Nitroaniline	0.0320	0.0226		mg/L		71	57 - 121
2-Nitrophenol	0.0320	0.0255		mg/L		80	51 - 120
3,3'-Dichlorobenzidine	0.0640	0.0538		mg/L		84	51 - 154
3-Nitroaniline	0.0320	0.0225		mg/L		70	47 - 123
4,6-Dinitro-2-methylphenol	0.0640	0.0476		mg/L		74	49 - 130
4-Bromophenyl phenyl ether	0.0320	0.0284		mg/L		89	58 - 125
4-Chloro-3-methylphenol	0.0320	0.0240		mg/L		75	52 - 120
4-Chloroaniline	0.0320	0.00588		mg/L		18	10 - 126
4-Chlorophenyl phenyl ether	0.0320	0.0257		mg/L		80	55 - 120
4-Nitroaniline	0.0320	0.0284		mg/L		89	56 - 127
4-Nitrophenol	0.0640	0.0484		mg/L		76	10 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563981/20-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563981

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	0.0320	0.0259		mg/L		81	54 - 120
Acenaphthylene	0.0320	0.0247		mg/L		77	50 - 120
Acetophenone	0.0320	0.0225		mg/L		70	47 - 120
Anthracene	0.0320	0.0240		mg/L		75	58 - 121
Atrazine	0.0320	0.0251		mg/L		78	68 - 126
Benzaldehyde	0.0320	0.0322		mg/L		101	26 - 147
Benzo[a]anthracene	0.0320	0.0272		mg/L		85	61 - 120
Benzo[a]pyrene	0.0320	0.0268		mg/L		84	56 - 131
Benzo[b]fluoranthene	0.0320	0.0269		mg/L		84	57 - 130
Benzo[g,h,i]perylene	0.0320	0.0247		mg/L		77	58 - 120
Benzo[k]fluoranthene	0.0320	0.0272		mg/L		85	53 - 137
Bis(2-chloroethoxy)methane	0.0320	0.0265		mg/L		83	49 - 120
Bis(2-chloroethyl)ether	0.0320	0.0237		mg/L		74	40 - 120
Bis(2-ethylhexyl) phthalate	0.0320	0.0255		mg/L		80	60 - 126
Butyl benzyl phthalate	0.0320	0.0297		mg/L		93	58 - 124
Caprolactam	0.0320	0.00890		mg/L		28	10 - 120
Carbazole	0.0320	0.0289		mg/L		90	60 - 130
Chrysene	0.0320	0.0270		mg/L		85	57 - 120
Dibenz(a,h)anthracene	0.0320	0.0253		mg/L		79	58 - 120
Dibenzofuran	0.0320	0.0261		mg/L		82	54 - 120
Diethyl phthalate	0.0320	0.0238		mg/L		74	55 - 120
Dimethyl phthalate	0.0320	0.0272		mg/L		85	49 - 125
Di-n-butyl phthalate	0.0320	0.0258		mg/L		81	59 - 130
Di-n-octyl phthalate	0.0320	0.0221		mg/L		69	57 - 126
Fluoranthene	0.0320	0.0270		mg/L		85	58 - 128
Fluorene	0.0320	0.0241		mg/L		75	55 - 120
Hexachlorobenzene	0.0320	0.0305		mg/L		95	55 - 120
Hexachlorobutadiene	0.0320	0.0265		mg/L		83	41 - 120
Hexachlorocyclopentadiene	0.0320	0.0273		mg/L		85	15 - 120
Hexachloroethane	0.0320	0.0246		mg/L		77	39 - 120
Indeno[1,2,3-cd]pyrene	0.0320	0.0258		mg/L		81	59 - 122
Isophorone	0.0320	0.0242		mg/L		76	51 - 120
N-Nitrosodi-n-propylamine	0.0320	0.0210		mg/L		65	49 - 120
N-Nitrosodiphenylamine	0.0320	0.0267		mg/L		84	56 - 125
Naphthalene	0.0320	0.0242		mg/L		76	46 - 120
Nitrobenzene	0.0320	0.0261		mg/L		81	47 - 120
Pentachlorophenol	0.0640	0.0575		mg/L		90	19 - 132
Phenanthrene	0.0320	0.0248		mg/L		77	55 - 120
Phenol	0.0320	0.0219		mg/L		68	10 - 120
Pyrene	0.0320	0.0301		mg/L		94	59 - 120
3 & 4 Methylphenol	0.0320	0.0205		mg/L		64	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	109		46 - 137
Phenol-d5 (Surr)	65		26 - 120
Nitrobenzene-d5 (Surr)	79		24 - 120
2-Fluorophenol (Surr)	111		19 - 120
2-Fluorobiphenyl (Surr)	80		33 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-563981/20-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563981

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	85		10 - 120

Lab Sample ID: LCS 240-563981/22-A
Matrix: Water
Analysis Batch: 564574

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 563981

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
2-Butoxyethanol	0.0320	0.0178		mg/L		56	10 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	96		46 - 137
Phenol-d5 (Surr)	35		26 - 120
Nitrobenzene-d5 (Surr)	60		24 - 120
2-Fluorophenol (Surr)	58		19 - 120
2-Fluorobiphenyl (Surr)	69		33 - 120
2,4,6-Tribromophenol (Surr)	49		10 - 120

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-564322/1-A
Matrix: Water
Analysis Batch: 564333

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564322

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics [C10 - C28]	94.1	J	500	68	ug/L		03/06/23 07:59	03/06/23 11:29	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
o-Terphenyl	72		52 - 121	03/06/23 07:59	03/06/23 11:29	1

Lab Sample ID: LCS 240-564322/2-A
Matrix: Water
Analysis Batch: 564333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564322

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Diesel Range Organics [C10 - C28]	2000	1470		ug/L		73	56 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
o-Terphenyl	87		52 - 121

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-564056/2-A
Matrix: Water
Analysis Batch: 564198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564056

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 11:41	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 240-564056/2-A
Matrix: Water
Analysis Batch: 564198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 11:41	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 11:41	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 11:41	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 11:41	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 11:41	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 11:41	1

Lab Sample ID: LCS 240-564056/3-A
Matrix: Water
Analysis Batch: 564198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564056

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.05		mg/L		102	50 - 150
Barium	2.00	1.95		mg/L		97	50 - 150
Cadmium	1.00	0.979		mg/L		98	50 - 150
Chromium	1.00	0.989		mg/L		99	50 - 150
Lead	1.00	0.956		mg/L		96	50 - 150
Selenium	2.00	2.10		mg/L		105	50 - 150
Silver	0.100	0.0973		mg/L		97	50 - 150

Lab Sample ID: LB 240-563935/1-B
Matrix: Water
Analysis Batch: 564198

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564056

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/02/23 14:00	03/03/23 11:37	1
Barium	0.00150	J	0.50	0.0013	mg/L		03/02/23 14:00	03/03/23 11:37	1
Cadmium	ND		0.050	0.00020	mg/L		03/02/23 14:00	03/03/23 11:37	1
Chromium	ND		0.050	0.0040	mg/L		03/02/23 14:00	03/03/23 11:37	1
Lead	ND		0.050	0.0028	mg/L		03/02/23 14:00	03/03/23 11:37	1
Selenium	ND		0.050	0.0060	mg/L		03/02/23 14:00	03/03/23 11:37	1
Silver	ND		0.050	0.00062	mg/L		03/02/23 14:00	03/03/23 11:37	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-564057/2-A
Matrix: Water
Analysis Batch: 564191

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564057

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:24	1

Lab Sample ID: LCS 240-564057/3-A
Matrix: Water
Analysis Batch: 564191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564057

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00516		mg/L		103	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-563935/1-C
Matrix: Water
Analysis Batch: 564191

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564057

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/02/23 14:00	03/03/23 13:18	1

Method: 1010B - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-564181/1
Matrix: Water
Analysis Batch: 564181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ignitability (Flashpoint)	81.0	81.2		Fahrenheit		100	97 - 103

Lab Sample ID: 240-181183-1 DU
Matrix: Water
Analysis Batch: 564181

Client Sample ID: WC - 257204 - BLUE BLDG WEST
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ignitability (Flashpoint)	>200		>200		Degrees F		NC	20

Method: 2540D-2015 - Total Suspended Solids (Dried at 103-105°C)

Lab Sample ID: MB 240-564157/1
Matrix: Water
Analysis Batch: 564157

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.0	mg/L			03/03/23 10:03	1

Lab Sample ID: LCS 240-564157/2
Matrix: Water
Analysis Batch: 564157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	66.2	63.0		mg/L		95	64 - 120

Lab Sample ID: 240-181183-1 DU
Matrix: Water
Analysis Batch: 564157

Client Sample ID: WC - 257204 - BLUE BLDG WEST
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	120		113		mg/L		4	10

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 240-564202/4
Matrix: Water
Analysis Batch: 564202

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.35	mg/L			03/03/23 10:56	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 240-564202/5
Matrix: Water
Analysis Batch: 564202

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	16.3		mg/L		89	85 - 115
TOC Result 1	18.3	16.2		mg/L		88	85 - 115
TOC Result 2	18.3	16.4		mg/L		90	85 - 115

Lab Sample ID: 240-181183-5 MS
Matrix: Water
Analysis Batch: 564202

Client Sample ID: WC - 251478 - GAS STATION
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20		10.0	27.0		mg/L		69	65 - 134
TOC Result 1	20		10.0	26.7		mg/L		68	65 - 134
TOC Result 2	20		10.0	27.3		mg/L		70	65 - 134

Lab Sample ID: 240-181183-5 MSD
Matrix: Water
Analysis Batch: 564202

Client Sample ID: WC - 251478 - GAS STATION
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20		10.0	27.1		mg/L		70	65 - 134	0	10
TOC Result 1	20		10.0	26.9		mg/L		70	65 - 134	1	10
TOC Result 2	20		10.0	27.3		mg/L		70	65 - 134	0	10

Method: 9040C - pH

Lab Sample ID: LCS 240-564103/25
Matrix: Water
Analysis Batch: 564103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

Lab Sample ID: LCS 240-564103/3
Matrix: Water
Analysis Batch: 564103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

Lab Sample ID: LCS 240-564103/46
Matrix: Water
Analysis Batch: 564103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181183-1

Method: 9040C - pH (Continued)

Lab Sample ID: LCS 240-564164/2
Matrix: Water
Analysis Batch: 564164

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

Lab Sample ID: 240-181183-1 DU
Matrix: Water
Analysis Batch: 564164

Client Sample ID: WC - 257204 - BLUE BLDG WEST
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
corrosivity by pH	8.0	HF	8.0		SU		0.4	20

Lab Sample ID: LCS 240-564173/3
Matrix: Water
Analysis Batch: 564173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

GC/MS VOA

Analysis Batch: 564039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	8260D	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	8260D	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	8260D	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	8260D	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	8260D	
240-181183-6	TB - 01	Total/NA	Water	8260D	
240-181183-7	TB - 02	Total/NA	Water	8260D	
240-181183-8	TB - 03	Total/NA	Water	8260D	
MB 240-564039/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564039/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564039/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 564153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	8260D	
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	8260D	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	8260D	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	8260D	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	8260D	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	8260D	
MB 240-564153/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564153/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564153/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 563981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1 - RA	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	3510C LVI	
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	3510C LVI	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	3510C LVI	
240-181183-3 - RA	WC - 251079 - CLARK	Total/NA	Water	3510C LVI	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	3510C LVI	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	3510C LVI	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	3510C LVI	
MB 240-563981/19-A	Method Blank	Total/NA	Water	3510C LVI	
LCS 240-563981/20-A	Lab Control Sample	Total/NA	Water	3510C LVI	
LCS 240-563981/22-A	Lab Control Sample	Total/NA	Water	3510C LVI	

Analysis Batch: 564574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	8270E	563981
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	8270E	563981
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	8270E	563981
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	8270E	563981
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	8270E	563981
MB 240-563981/19-A	Method Blank	Total/NA	Water	8270E	563981
LCS 240-563981/20-A	Lab Control Sample	Total/NA	Water	8270E	563981
LCS 240-563981/22-A	Lab Control Sample	Total/NA	Water	8270E	563981

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

GC/MS Semi VOA

Analysis Batch: 564717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1 - RA	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	8270E	563981
240-181183-3 - RA	WC - 251079 - CLARK	Total/NA	Water	8270E	563981

GC Semi VOA

Prep Batch: 564322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	3511	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	3511	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	3511	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	3511	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	3511	
MB 240-564322/1-A	Method Blank	Total/NA	Water	3511	
LCS 240-564322/2-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 564333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	8015D	564322
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	8015D	564322
MB 240-564322/1-A	Method Blank	Total/NA	Water	8015D	564322
LCS 240-564322/2-A	Lab Control Sample	Total/NA	Water	8015D	564322

Analysis Batch: 564335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	8015D	564322
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	8015D	564322
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	8015D	564322

Metals

Leach Batch: 563935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	TCLP	Water	1311	
240-181183-2	WC - 251060 - BLUE BLDG EAST	TCLP	Water	1311	
240-181183-3	WC - 251079 - CLARK	TCLP	Water	1311	
240-181183-4	WC - 251633 - PLEASANT	TCLP	Water	1311	
240-181183-5	WC - 251478 - GAS STATION	TCLP	Water	1311	
LB 240-563935/1-B	Method Blank	TCLP	Water	1311	
LB 240-563935/1-C	Method Blank	TCLP	Water	1311	

Prep Batch: 564056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	TCLP	Water	3010A	563935
240-181183-2	WC - 251060 - BLUE BLDG EAST	TCLP	Water	3010A	563935
240-181183-3	WC - 251079 - CLARK	TCLP	Water	3010A	563935
240-181183-4	WC - 251633 - PLEASANT	TCLP	Water	3010A	563935
240-181183-5	WC - 251478 - GAS STATION	TCLP	Water	3010A	563935
LB 240-563935/1-B	Method Blank	TCLP	Water	3010A	563935
MB 240-564056/2-A	Method Blank	Total/NA	Water	3010A	
LCS 240-564056/3-A	Lab Control Sample	Total/NA	Water	3010A	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Metals

Prep Batch: 564057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	TCLP	Water	7470A	563935
240-181183-2	WC - 251060 - BLUE BLDG EAST	TCLP	Water	7470A	563935
240-181183-3	WC - 251079 - CLARK	TCLP	Water	7470A	563935
240-181183-4	WC - 251633 - PLEASANT	TCLP	Water	7470A	563935
240-181183-5	WC - 251478 - GAS STATION	TCLP	Water	7470A	563935
LB 240-563935/1-C	Method Blank	TCLP	Water	7470A	563935
MB 240-564057/2-A	Method Blank	Total/NA	Water	7470A	
LCS 240-564057/3-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 564191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	TCLP	Water	7470A	564057
240-181183-2	WC - 251060 - BLUE BLDG EAST	TCLP	Water	7470A	564057
240-181183-3	WC - 251079 - CLARK	TCLP	Water	7470A	564057
240-181183-4	WC - 251633 - PLEASANT	TCLP	Water	7470A	564057
240-181183-5	WC - 251478 - GAS STATION	TCLP	Water	7470A	564057
LB 240-563935/1-C	Method Blank	TCLP	Water	7470A	564057
MB 240-564057/2-A	Method Blank	Total/NA	Water	7470A	564057
LCS 240-564057/3-A	Lab Control Sample	Total/NA	Water	7470A	564057

Analysis Batch: 564198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	TCLP	Water	6010D	564056
240-181183-2	WC - 251060 - BLUE BLDG EAST	TCLP	Water	6010D	564056
240-181183-3	WC - 251079 - CLARK	TCLP	Water	6010D	564056
240-181183-4	WC - 251633 - PLEASANT	TCLP	Water	6010D	564056
240-181183-5	WC - 251478 - GAS STATION	TCLP	Water	6010D	564056
LB 240-563935/1-B	Method Blank	TCLP	Water	6010D	564056
MB 240-564056/2-A	Method Blank	Total/NA	Water	6010D	564056
LCS 240-564056/3-A	Lab Control Sample	Total/NA	Water	6010D	564056

General Chemistry

Analysis Batch: 564103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-564103/25	Lab Control Sample	Total/NA	Water	9040C	
LCS 240-564103/3	Lab Control Sample	Total/NA	Water	9040C	
LCS 240-564103/46	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 564157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	2540D-2015	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	2540D-2015	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	2540D-2015	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	2540D-2015	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	2540D-2015	
MB 240-564157/1	Method Blank	Total/NA	Water	2540D-2015	
LCS 240-564157/2	Lab Control Sample	Total/NA	Water	2540D-2015	
240-181183-1 DU	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	2540D-2015	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

General Chemistry

Analysis Batch: 564164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	9040C	
LCS 240-564164/2	Lab Control Sample	Total/NA	Water	9040C	
240-181183-1 DU	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	9040C	

Analysis Batch: 564173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	9040C	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	9040C	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	9040C	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	9040C	
LCS 240-564173/3	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 564181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	1010B	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	1010B	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	1010B	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	1010B	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	1010B	
LCS 240-564181/1	Lab Control Sample	Total/NA	Water	1010B	
240-181183-1 DU	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	1010B	

Analysis Batch: 564202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181183-1	WC - 257204 - BLUE BLDG WEST	Total/NA	Water	5310 C-2014	
240-181183-2	WC - 251060 - BLUE BLDG EAST	Total/NA	Water	5310 C-2014	
240-181183-3	WC - 251079 - CLARK	Total/NA	Water	5310 C-2014	
240-181183-4	WC - 251633 - PLEASANT	Total/NA	Water	5310 C-2014	
240-181183-5	WC - 251478 - GAS STATION	Total/NA	Water	5310 C-2014	
MB 240-564202/4	Method Blank	Total/NA	Water	5310 C-2014	
LCS 240-564202/5	Lab Control Sample	Total/NA	Water	5310 C-2014	
240-181183-5 MS	WC - 251478 - GAS STATION	Total/NA	Water	5310 C-2014	
240-181183-5 MSD	WC - 251478 - GAS STATION	Total/NA	Water	5310 C-2014	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 257204 - BLUE BLDG WEST

Lab Sample ID: 240-181183-1

Date Collected: 03/01/23 12:40

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564153	SAM	EET CAN	03/03/23 15:17
Total/NA	Analysis	8260D		200	564153	SAM	EET CAN	03/03/23 21:38
Total/NA	Prep	3510C LVI			563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E		5	564574	TMH	EET CAN	03/08/23 12:08
Total/NA	Prep	3510C LVI	RA		563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E	RA	10	564717	TMH	EET CAN	03/09/23 08:07
Total/NA	Prep	3511			564322	LKG	EET CAN	03/06/23 07:59
Total/NA	Analysis	8015D		1	564333	EPF	EET CAN	03/06/23 12:24
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	3010A			564056	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	6010D		1	564198	RKT	EET CAN	03/03/23 12:36
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	7470A			564057	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	7470A		1	564191	MRL	EET CAN	03/03/23 13:38
Total/NA	Analysis	1010B		1	564181	JMR	EET CAN	03/03/23 08:46
Total/NA	Analysis	2540D-2015		1	564157	GH	EET CAN	03/03/23 10:03
Total/NA	Analysis	5310 C-2014		1	564202	MED	EET CAN	03/03/23 12:42
Total/NA	Analysis	9040C		1	564164	JMR	EET CAN	03/03/23 10:33

Client Sample ID: WC - 251060 - BLUE BLDG EAST

Lab Sample ID: 240-181183-2

Date Collected: 03/01/23 12:50

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		40	564039	SAM	EET CAN	03/02/23 16:44
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 22:40
Total/NA	Analysis	8260D		416.667	564153	SAM	EET CAN	03/03/23 17:15
Total/NA	Prep	3510C LVI			563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E		100	564574	TMH	EET CAN	03/08/23 12:31
Total/NA	Prep	3511			564322	LKG	EET CAN	03/06/23 07:59
Total/NA	Analysis	8015D		1	564333	EPF	EET CAN	03/06/23 12:52
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	3010A			564056	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	6010D		1	564198	RKT	EET CAN	03/03/23 12:41
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	7470A			564057	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	7470A		1	564191	MRL	EET CAN	03/03/23 13:40
Total/NA	Analysis	1010B		1	564181	JMR	EET CAN	03/03/23 09:49
Total/NA	Analysis	2540D-2015		1	564157	GH	EET CAN	03/03/23 10:03
Total/NA	Analysis	5310 C-2014		5	564202	MED	EET CAN	03/03/23 12:02
Total/NA	Analysis	9040C		1	564173	JMR	EET CAN	03/03/23 08:52

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251079 - CLARK

Lab Sample ID: 240-181183-3

Date Collected: 03/01/23 13:00

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564153	SAM	EET CAN	03/03/23 14:53
Total/NA	Analysis	8260D		5	564153	SAM	EET CAN	03/03/23 21:14
Total/NA	Prep	3510C LVI			563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E		400	564574	TMH	EET CAN	03/08/23 12:54
Total/NA	Prep	3510C LVI	RA		563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E	RA	1000	564717	TMH	EET CAN	03/09/23 08:27
Total/NA	Prep	3511			564322	LKG	EET CAN	03/06/23 07:59
Total/NA	Analysis	8015D		1	564335	EPF	EET CAN	03/06/23 11:29
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	3010A			564056	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	6010D		1	564198	RKT	EET CAN	03/03/23 12:45
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	7470A			564057	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	7470A		1	564191	MRL	EET CAN	03/03/23 13:42
Total/NA	Analysis	1010B		1	564181	JMR	EET CAN	03/03/23 10:20
Total/NA	Analysis	2540D-2015		1	564157	GH	EET CAN	03/03/23 10:03
Total/NA	Analysis	5310 C-2014		5	564202	MED	EET CAN	03/03/23 12:15
Total/NA	Analysis	9040C		1	564173	JMR	EET CAN	03/03/23 08:59

Client Sample ID: WC - 251633 - PLEASANT

Lab Sample ID: 240-181183-4

Date Collected: 03/01/23 13:25

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	564039	SAM	EET CAN	03/02/23 17:31
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 23:04
Total/NA	Prep	3510C LVI			563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E		200	564574	TMH	EET CAN	03/08/23 13:18
Total/NA	Prep	3511			564322	LKG	EET CAN	03/06/23 07:59
Total/NA	Analysis	8015D		1	564335	EPF	EET CAN	03/06/23 11:57
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	3010A			564056	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	6010D		1	564198	RKT	EET CAN	03/03/23 12:49
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	7470A			564057	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	7470A		1	564191	MRL	EET CAN	03/03/23 13:44
Total/NA	Analysis	1010B		1	564181	JMR	EET CAN	03/03/23 10:52
Total/NA	Analysis	2540D-2015		1	564157	GH	EET CAN	03/03/23 10:03
Total/NA	Analysis	5310 C-2014		10	564202	MED	EET CAN	03/03/23 12:29
Total/NA	Analysis	9040C		1	564173	JMR	EET CAN	03/03/23 09:06

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Client Sample ID: WC - 251478 - GAS STATION

Lab Sample ID: 240-181183-5

Date Collected: 03/01/23 13:35

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 23:27
Total/NA	Analysis	8260D		4	564153	SAM	EET CAN	03/03/23 14:06
Total/NA	Prep	3510C LVI			563981	MDH	EET CAN	03/02/23 08:54
Total/NA	Analysis	8270E		400	564574	TMH	EET CAN	03/08/23 13:41
Total/NA	Prep	3511			564322	LKG	EET CAN	03/06/23 07:59
Total/NA	Analysis	8015D		1	564335	EPF	EET CAN	03/06/23 12:24
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	3010A			564056	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	6010D		1	564198	RKT	EET CAN	03/03/23 12:54
TCLP	Leach	1311			563935	DRJ	EET CAN	03/02/23 11:00 - 03/02/23 11:05 ¹
TCLP	Prep	7470A			564057	AJC	EET CAN	03/02/23 14:00
TCLP	Analysis	7470A		1	564191	MRL	EET CAN	03/03/23 13:51
Total/NA	Analysis	1010B		1	564181	JMR	EET CAN	03/03/23 11:23
Total/NA	Analysis	2540D-2015		1	564157	GH	EET CAN	03/03/23 10:03
Total/NA	Analysis	5310 C-2014		1	564202	MED	EET CAN	03/03/23 11:22
Total/NA	Analysis	9040C		1	564173	JMR	EET CAN	03/03/23 09:11

Client Sample ID: TB - 01

Lab Sample ID: 240-181183-6

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 15:55

Client Sample ID: TB - 02

Lab Sample ID: 240-181183-7

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 16:19

Client Sample ID: TB - 03

Lab Sample ID: 240-181183-8

Date Collected: 03/01/23 00:00

Matrix: Water

Date Received: 03/01/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564039	SAM	EET CAN	03/02/23 17:07

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181183-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Chain of Custody Record

644929



Environment Testing
America

Address:

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact
 Company Name: **Arcadis**
 Address: **4665 Cornwell Rd Ste 200**
 City/State/Zip: **Cincinnati, OH 45241**
 Phone: _____
 Fax: _____

Project Name: **Norfolk Southern - ER**
 Site: **East Pavilions, OH**
 PO #: **24030745**

Project Manager: **Jason Katrip**
 Tel/Email: **Jason.Katrip@arcadis.com**

Site Contact: **Carlynn Gray** Date: **3/1/23**
 Lab Contact: **Mike DeLeon** Carrier: **Courier**

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TSS - suspended solids	Total Metals	Total SVOC	Total VOC	TPH - ORO	Total organic carbon	pH	Corrosion Flashpoint	PFAS/PEEA	Sample Specific Notes:
WC-257204-Blue Bldg West	3/1/23	1240	G	W	13	N	N	X	X	X	X	X	X	X	X		
WC-251060-Blue Bldg East	3/1/23	1250	G	W	13	N	N	X	X	X	X	X	X	X	X		
WC-251079-Clark	3/1/23	1300	G	W	13	N	N	X	X	X	X	X	X	X	X		
WC-251033-Pleasant	3/1/23	1325	G	W	13	N	N	X	X	X	X	X	X	X	X		
WC-251478-Gas Station	3/1/23	1335	G	W	13	N	N	X	X	X	X	X	X	X	X		
TB-01	3/1/23			W	2	N	N		X								
TB-02	3/1/23			W	2	N	N		X								
TB-03	3/1/23			W	2	N	N		X								



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard Flammable Skin Irritant Unknown Poison B

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Company Name: **Arcadis** Date/Time: **3/1/23 1817**
 Relinquished by: **Karl Handberg**

Company Name: **EETNL** Date/Time: **3-1-23 2000**
 Relinquished by: **Dustin For**

Company Name: **EETNL** Date/Time: **3-1-23 2000**
 Relinquished by: _____

Custody Seal No.: _____
 Company: **Arcadis**
 Company: **EETNL**
 Company: _____

Received by: **Dave La**
 Received by: **Judith M Li**
 Received in Laboratory by: _____

Therm ID No.: _____
 Date/Time: **3-1-23 1817**
 Date/Time: **3-1-23 2000**
 Date/Time: _____



Client Arcadis Site Name NSRR-ER Cooler unpacked by: (signature)
Cooler Received on 3-1-23 Opened on 3-1-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

- Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
- Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No NA
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No N/A
- Sufficient quantity received to perform indicated analyses? Yes No
- Are these work share samples and all listed on the COC? Yes No
 If yes, Questions 13-17 have been checked at the originating laboratory.
- Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864
- Were VOAs on the COC? Yes No
- Were air bubbles >6 mm in any VOA vials? Yes No NA
 Larger than this. 
- Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered Yes No
- Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____

COC asks for total metals, client wants TCR metals instead.
For PFAS another 2L bottle was received instead of plastic 250ml
bottles, fixed at lab. - M.A.A. 3/2/23 16:20

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/11/2023 1:53:26 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-181523-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/11/2023 1:53:26 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	10
Surrogate Summary	26
QC Sample Results	28
QC Association Summary	39
Lab Chronicle	42
Certification Summary	44
Chain of Custody	45

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Job ID: 240-181523-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-181523-1

Receipt

The samples were received on 3/8/2023 12:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564793 recovered above the upper control limit for Dichloro-difluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-251362 (240-181523-1), WC-537A (240-181523-2), WC-AL5679 (240-181523-3), WC-AL4944 (240-181523-4), WC-AL4216 (240-181523-5), WC-531A (240-181523-6), TRIP BLANK (240-181523-8), (CCV 240-564793/4), (CCVIS 240-564793/3), (LCS 240-564793/5), (LCS 240-564793/6), (MB 240-564793/8), (240-181229-B-11), (240-181229-B-11 MS) and (240-181229-B-11 MSD).

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-564959 recovered above the upper control limit for Dichloro-difluoromethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-251362 (240-181523-1), WC-537A (240-181523-2), WC-AL5679 (240-181523-3), WC-AL4944 (240-181523-4), WC-AL4216 (240-181523-5), WC-531A (240-181523-6), (CCV 240-564959/4), (CCVIS 240-564959/3), (LCS 240-564959/5), (LCS 240-564959/6), (MB 240-564959/8), (240-181229-D-9), (240-181229-D-9 MS) and (240-181229-D-9 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN
Composite	Sample Compositing	None	EET CAN

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-181523-1	WC-251362	Water	03/07/23 15:30	03/08/23 12:25
240-181523-2	WC-537A	Water	03/07/23 15:40	03/08/23 12:25
240-181523-3	WC-AL5679	Water	03/07/23 15:58	03/08/23 12:25
240-181523-4	WC-AL4944	Water	03/07/23 15:50	03/08/23 12:25
240-181523-5	WC-AL4216	Water	03/07/23 16:05	03/08/23 12:25
240-181523-6	WC-531A	Water	03/07/23 16:15	03/08/23 12:25
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	Solid	03/07/23 17:15	03/08/23 12:25
240-181523-8	TRIP BLANK	Water	03/07/23 00:00	03/08/23 12:25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0015	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.0086	J	0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00080	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Toluene	0.00074	J	0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.016		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0024		0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0027	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.036		0.010	0.0054	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0014	J	0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.0075		0.0010	0.00045	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0035	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.012		0.010	0.0054	mg/L	1		8260D	Total/NA
Vinyl chloride	0.015		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0015	J	0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0018	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.010		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00043	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0037		0.0010	0.00045	mg/L	1		8260D	Total/NA

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.014		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.0021		0.0010	0.00042	mg/L	1		8260D	Total/NA
Tetrachloroethene	0.0029		0.0010	0.00044	mg/L	1		8260D	Total/NA
Toluene	0.00067	J	0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0014		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0026		0.0020	0.00042	mg/L	1		8260D	Total/NA

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L	1		8260D	TCLP
Arsenic	0.0054	J	0.050	0.0041	mg/L	1		6010D	TCLP
Barium	0.099	J	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00027	J	0.050	0.00020	mg/L	1		6010D	TCLP

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418 (Continued)

Lab Sample ID: 240-181523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0071	J	0.050	0.0028	mg/L	1		6010D	TCLP
Silver	0.00082	J	0.050	0.00062	mg/L	1		6010D	TCLP

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton



Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 16:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 16:53	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 16:53	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 16:53	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 16:53	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 16:53	1
2-Butanone (MEK)	0.0015	J	0.010	0.0012	mg/L			03/09/23 16:53	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 16:53	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 16:53	1
Acetone	0.0086	J	0.010	0.0054	mg/L			03/09/23 16:53	1
Benzene	0.00080	J	0.0010	0.00042	mg/L			03/09/23 16:53	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 16:53	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 16:53	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 16:53	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 16:53	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 16:53	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 16:53	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 16:53	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 16:53	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 16:53	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 16:53	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 16:53	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 16:53	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 16:53	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 16:53	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 16:53	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 16:53	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 16:53	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 16:53	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 16:53	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 16:53	1
Toluene	0.00074	J	0.0010	0.00044	mg/L			03/09/23 16:53	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 16:53	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 16:53	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 16:53	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 16:53	1
Vinyl chloride	0.016		0.0010	0.00045	mg/L			03/09/23 16:53	1
Xylenes, Total	0.0024		0.0020	0.00042	mg/L			03/09/23 16:53	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	102		78 - 122		03/09/23 16:53	1
Toluene-d8 (Surr)	93		78 - 122		03/10/23 14:14	2
Dibromofluoromethane (Surr)	114		73 - 120		03/09/23 16:53	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 14:14	2
4-Bromofluorobenzene (Surr)	113		56 - 136		03/09/23 16:53	1
4-Bromofluorobenzene (Surr)	99		56 - 136		03/10/23 14:14	2
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/09/23 16:53	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 14:14	2

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 17:17	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 17:17	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 17:17	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 17:17	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 17:17	1
2-Butanone (MEK)	0.0027	J	0.010	0.0012	mg/L			03/09/23 17:17	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 17:17	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 17:17	1
Acetone	0.036		0.010	0.0054	mg/L			03/09/23 17:17	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 17:17	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 17:17	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 17:17	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 17:17	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 17:17	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 17:17	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 17:17	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 17:17	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 17:17	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 17:17	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 17:17	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 17:17	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 17:17	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 17:17	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 17:17	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 17:17	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 17:17	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 17:17	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 17:17	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 17:17	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:17	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 17:17	1
Xylenes, Total	0.0014	J	0.0020	0.00042	mg/L			03/09/23 17:17	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	101		78 - 122		03/09/23 17:17	1
Toluene-d8 (Surr)	92		78 - 122		03/10/23 14:38	10
Dibromofluoromethane (Surr)	112		73 - 120		03/09/23 17:17	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 14:38	10
4-Bromofluorobenzene (Surr)	106		56 - 136		03/09/23 17:17	1
4-Bromofluorobenzene (Surr)	92		56 - 136		03/10/23 14:38	10
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		03/09/23 17:17	1
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		03/10/23 14:38	10

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 17:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 17:41	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 17:41	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 17:41	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 17:41	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 17:41	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 17:41	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 17:41	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 17:41	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 17:41	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 17:41	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 17:41	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 17:41	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 17:41	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 17:41	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 17:41	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 17:41	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 17:41	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 17:41	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 17:41	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 17:41	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 17:41	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 17:41	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 17:41	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 17:41	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 17:41	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 17:41	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 17:41	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 17:41	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 17:41	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 17:41	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 17:41	1
Vinyl chloride	0.0075		0.0010	0.00045	mg/L			03/09/23 17:41	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 17:41	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		78 - 122		03/09/23 17:41	1
<i>Toluene-d8 (Surr)</i>	91		78 - 122		03/10/23 15:03	4
<i>Toluene-d8 (Surr)</i>	100		78 - 122		03/10/23 20:12	1
<i>Dibromofluoromethane (Surr)</i>	111		73 - 120		03/09/23 17:41	1
<i>Dibromofluoromethane (Surr)</i>	101		73 - 120		03/10/23 15:03	4
<i>Dibromofluoromethane (Surr)</i>	112		73 - 120		03/10/23 20:12	1
<i>4-Bromofluorobenzene (Surr)</i>	100		56 - 136		03/09/23 17:41	1
<i>4-Bromofluorobenzene (Surr)</i>	90		56 - 136		03/10/23 15:03	4
<i>4-Bromofluorobenzene (Surr)</i>	99		56 - 136		03/10/23 20:12	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		62 - 137		03/09/23 17:41	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		62 - 137		03/10/23 15:03	4
<i>1,2-Dichloroethane-d4 (Surr)</i>	104		62 - 137		03/10/23 20:12	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:05	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:05	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:05	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:05	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:05	1
2-Butanone (MEK)	0.0035	J	0.010	0.0012	mg/L			03/09/23 18:05	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:05	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:05	1
Acetone	0.012		0.010	0.0054	mg/L			03/09/23 18:05	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:05	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:05	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:05	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:05	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:05	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:05	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:05	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:05	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:05	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:05	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:05	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:05	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:05	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:05	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:05	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:05	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:05	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:05	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:05	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:05	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:05	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:05	1
Vinyl chloride	0.015		0.0010	0.00045	mg/L			03/09/23 18:05	1
Xylenes, Total	0.0015	J	0.0020	0.00042	mg/L			03/09/23 18:05	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	101		78 - 122		03/09/23 18:05	1
Toluene-d8 (Surr)	92		78 - 122		03/10/23 15:27	50
Dibromofluoromethane (Surr)	111		73 - 120		03/09/23 18:05	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 15:27	50
4-Bromofluorobenzene (Surr)	106		56 - 136		03/09/23 18:05	1
4-Bromofluorobenzene (Surr)	89		56 - 136		03/10/23 15:27	50
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		03/09/23 18:05	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 15:27	50

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:28	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:28	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:28	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:28	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:28	1
2-Butanone (MEK)	0.0018	J	0.010	0.0012	mg/L			03/09/23 18:28	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:28	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:28	1
Acetone	0.010		0.010	0.0054	mg/L			03/09/23 18:28	1
Benzene	0.00043	J	0.0010	0.00042	mg/L			03/09/23 18:28	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:28	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:28	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:28	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:28	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:28	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:28	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:28	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:28	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:28	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:28	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:28	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:28	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:28	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:28	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:28	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:28	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:28	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:28	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:28	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:28	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:28	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:28	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:28	1
Vinyl chloride	0.0037		0.0010	0.00045	mg/L			03/09/23 18:28	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 18:28	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		78 - 122		03/09/23 18:28	1
Toluene-d8 (Surr)	90		78 - 122		03/10/23 15:51	20
Dibromofluoromethane (Surr)	110		73 - 120		03/09/23 18:28	1
Dibromofluoromethane (Surr)	101		73 - 120		03/10/23 15:51	20
4-Bromofluorobenzene (Surr)	102		56 - 136		03/09/23 18:28	1
4-Bromofluorobenzene (Surr)	86		56 - 136		03/10/23 15:51	20
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		03/09/23 18:28	1
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		03/10/23 15:51	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 18:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 18:52	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 18:52	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 18:52	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 18:52	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 18:52	1
2-Butanone (MEK)	0.0025	J	0.010	0.0012	mg/L			03/09/23 18:52	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 18:52	1
Acetone	0.014		0.010	0.0054	mg/L			03/09/23 18:52	1
Benzene	0.0021		0.0010	0.00042	mg/L			03/09/23 18:52	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 18:52	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 18:52	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 18:52	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 18:52	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 18:52	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 18:52	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 18:52	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 18:52	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 18:52	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 18:52	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 18:52	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 18:52	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 18:52	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 18:52	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 18:52	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 18:52	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 18:52	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 18:52	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 18:52	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
Tetrachloroethene	0.0029		0.0010	0.00044	mg/L			03/09/23 18:52	1
Toluene	0.00067	J	0.0010	0.00044	mg/L			03/09/23 18:52	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 18:52	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 18:52	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 18:52	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 18:52	1
Vinyl chloride	0.0014		0.0010	0.00045	mg/L			03/09/23 18:52	1
Xylenes, Total	0.0026		0.0020	0.00042	mg/L			03/09/23 18:52	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		78 - 122		03/09/23 18:52	1
Toluene-d8 (Surr)	89		78 - 122		03/10/23 16:16	20
Dibromofluoromethane (Surr)	107		73 - 120		03/09/23 18:52	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 16:16	20
4-Bromofluorobenzene (Surr)	110		56 - 136		03/09/23 18:52	1
4-Bromofluorobenzene (Surr)	91		56 - 136		03/10/23 16:16	20
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		03/09/23 18:52	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/10/23 16:16	20

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/09/23 15:31	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/09/23 15:31	1
2-Butanone (MEK)	0.012	J	0.25	0.0012	mg/L			03/09/23 15:31	1
Benzene	ND		0.025	0.00042	mg/L			03/09/23 15:31	1
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/09/23 15:31	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/09/23 15:31	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/09/23 15:31	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/09/23 15:31	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/09/23 15:31	1
Chloroform	ND		0.025	0.00047	mg/L			03/09/23 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	108		80 - 120		03/09/23 15:31	1
<i>Dibromofluoromethane (Surr)</i>	106		71 - 121		03/09/23 15:31	1
<i>4-Bromofluorobenzene (Surr)</i>	103		80 - 120		03/09/23 15:31	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		76 - 120		03/09/23 15:31	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/10/23 07:43	03/11/23 10:48	1
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/10/23 07:43	03/11/23 10:48	1
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/10/23 07:43	03/11/23 10:48	1
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/10/23 07:43	03/11/23 10:48	1
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/10/23 07:43	03/11/23 10:48	1
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/10/23 07:43	03/11/23 10:48	1
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/10/23 07:43	03/11/23 10:48	1
Pyridine	ND		0.0040	0.00036	mg/L		03/10/23 07:43	03/11/23 10:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Terphenyl-d14 (Surr)</i>	91		46 - 137	03/10/23 07:43	03/11/23 10:48	1
<i>Phenol-d5 (Surr)</i>	68		26 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>Nitrobenzene-d5 (Surr)</i>	75		24 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2-Fluorophenol (Surr)</i>	71		19 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2-Fluorobiphenyl (Surr)</i>	102		33 - 120	03/10/23 07:43	03/11/23 10:48	1
<i>2,4,6-Tribromophenol (Surr)</i>	95		10 - 120	03/10/23 07:43	03/11/23 10:48	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:27	1
Barium	0.099	J	0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:27	1
Cadmium	0.00027	J	0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:27	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:27	1
Lead	0.0071	J	0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:27	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:27	1
Silver	0.00082	J	0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:27	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:17	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 14:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 14:54	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 14:54	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 14:54	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 14:54	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 14:54	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 14:54	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 14:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 14:54	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 14:54	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 14:54	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 14:54	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 14:54	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 14:54	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 14:54	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 14:54	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 14:54	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 14:54	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 14:54	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 14:54	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 14:54	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 14:54	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 14:54	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 14:54	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 14:54	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 14:54	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 14:54	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 14:54	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 14:54	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 14:54	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 14:54	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 14:54	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 14:54	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	100		78 - 122		03/09/23 14:54	1
Dibromofluoromethane (Surr)	115		73 - 120		03/09/23 14:54	1
4-Bromofluorobenzene (Surr)	93		56 - 136		03/09/23 14:54	1
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		03/09/23 14:54	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
LCS 240-564830/10	Lab Control Sample	98	100	100	95
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
DBFM = Dibromofluoromethane (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DCA = 1,2-Dichloroethane-d4 (Surr)					

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	DBFM (71-121)	BFB (80-120)	DCA (76-120)
240-181523-7	WC-SB1833, SB1450, SB2446,	108	106	103	105
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	95	97	92
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	96	93	91
LB 240-564696/1-A MB	Method Blank	100	101	96	100
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
DBFM = Dibromofluoromethane (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DCA = 1,2-Dichloroethane-d4 (Surr)					

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-181523-1	WC-251362	102	114	113	106
240-181523-1	WC-251362	93	101	99	93
240-181523-2	WC-537A	101	112	106	104
240-181523-2	WC-537A	92	101	92	94
240-181523-3	WC-AL5679	101	111	100	100
240-181523-3	WC-AL5679	91	101	90	93
240-181523-3	WC-AL5679	100	112	99	104
240-181523-4	WC-AL4944	101	111	106	105
240-181523-4	WC-AL4944	92	99	89	93
240-181523-5	WC-AL4216	98	110	102	103
240-181523-5	WC-AL4216	90	101	86	95
240-181523-6	WC-531A	98	107	110	99
240-181523-6	WC-531A	89	99	91	93
240-181523-8	TRIP BLANK	100	115	93	110
LCS 240-564793/5	Lab Control Sample	107	106	103	101
LCS 240-564793/6	Lab Control Sample	100	109	102	105
LCS 240-564959/5	Lab Control Sample	97	94	94	91
LCS 240-564959/6	Lab Control Sample	90	97	91	92
MB 240-564793/8	Method Blank	102	113	94	106

Eurofins Canton

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
MB 240-564959/8	Method Blank	89	99	81	94

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
LCS 240-564907/4-A	Lab Control Sample	91	61	80	66	84	93
MB 240-564907/3-A	Method Blank	97	64	77	69	87	94

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-181523-7	WC-SB1833, SB1450, SB2446,	91	68	75	71	102	95
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	95	64	80	68	89	113

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-564793/8
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/09/23 12:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/09/23 12:55	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/09/23 12:55	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/09/23 12:55	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/09/23 12:55	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/09/23 12:55	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/09/23 12:55	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/09/23 12:55	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/09/23 12:55	1
Acetone	ND		0.010	0.0054	mg/L			03/09/23 12:55	1
Benzene	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/09/23 12:55	1
Bromoform	ND		0.0010	0.00076	mg/L			03/09/23 12:55	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/09/23 12:55	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/09/23 12:55	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/09/23 12:55	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/09/23 12:55	1
Chloroform	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/09/23 12:55	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/09/23 12:55	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/09/23 12:55	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/09/23 12:55	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/09/23 12:55	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/09/23 12:55	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/09/23 12:55	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/09/23 12:55	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/09/23 12:55	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/09/23 12:55	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/09/23 12:55	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/09/23 12:55	1
Styrene	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
Toluene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/09/23 12:55	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/09/23 12:55	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/09/23 12:55	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/09/23 12:55	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/09/23 12:55	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564793/8
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		78 - 122		03/09/23 12:55	1
Dibromofluoromethane (Surr)	113		73 - 120		03/09/23 12:55	1
4-Bromofluorobenzene (Surr)	94		56 - 136		03/09/23 12:55	1
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/09/23 12:55	1

Lab Sample ID: LCS 240-564793/5
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1,1-Trichloroethane	0.0250	0.0248		mg/L		99	64 - 131
1,1,2,2-Tetrachloroethane	0.0250	0.0264		mg/L		106	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0262		mg/L		105	51 - 146
1,1,2-Trichloroethane	0.0250	0.0260		mg/L		104	70 - 138
1,1-Dichloroethane	0.0250	0.0232		mg/L		93	72 - 127
1,1-Dichloroethene	0.0250	0.0254		mg/L		102	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0274		mg/L		110	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0244		mg/L		98	53 - 135
Ethylene Dibromide	0.0250	0.0249		mg/L		100	71 - 134
1,2-Dichlorobenzene	0.0250	0.0264		mg/L		105	78 - 120
1,2-Dichloroethane	0.0250	0.0239		mg/L		96	66 - 128
1,2-Dichloropropane	0.0250	0.0244		mg/L		98	75 - 133
1,3-Dichlorobenzene	0.0250	0.0261		mg/L		104	80 - 120
1,4-Dichlorobenzene	0.0250	0.0260		mg/L		104	80 - 120
2-Butanone (MEK)	0.0500	0.0486		mg/L		97	54 - 156
2-Hexanone	0.0500	0.0538		mg/L		108	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0546		mg/L		109	46 - 158
Acetone	0.0500	0.0464		mg/L		93	50 - 149
Benzene	0.0250	0.0252		mg/L		101	77 - 123
Dichlorobromomethane	0.0250	0.0239		mg/L		96	69 - 126
Bromoform	0.0250	0.0255		mg/L		102	57 - 129
Bromomethane	0.0125	0.0115		mg/L		92	36 - 142
Carbon disulfide	0.0250	0.0247		mg/L		99	43 - 140
Carbon tetrachloride	0.0250	0.0249		mg/L		100	55 - 137
Chlorobenzene	0.0250	0.0256		mg/L		103	80 - 121
Chloroethane	0.0125	0.0109		mg/L		87	38 - 152
Chloroform	0.0250	0.0241		mg/L		96	74 - 122
Chloromethane	0.0125	0.0124		mg/L		99	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0243		mg/L		97	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0246		mg/L		98	64 - 130
Cyclohexane	0.0250	0.0272		mg/L		109	58 - 146
Chlorodibromomethane	0.0250	0.0245		mg/L		98	70 - 124
Dichlorodifluoromethane	0.0125	0.0117		mg/L		94	34 - 153
Ethylbenzene	0.0250	0.0258		mg/L		103	80 - 121
Isopropylbenzene	0.0250	0.0271		mg/L		109	74 - 128
Methyl acetate	0.0500	0.0426		mg/L		85	42 - 169
Methyl tert-butyl ether	0.0250	0.0244		mg/L		98	65 - 126
Methylcyclohexane	0.0250	0.0283		mg/L		113	62 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564793/5
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0259		mg/L		104	71 - 125
Styrene	0.0250	0.0272		mg/L		109	80 - 135
Tetrachloroethene	0.0250	0.0266		mg/L		106	76 - 123
Toluene	0.0250	0.0259		mg/L		104	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0245		mg/L		98	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0248		mg/L		99	57 - 129
Trichloroethene	0.0250	0.0248		mg/L		99	70 - 122
Trichlorofluoromethane	0.0125	0.0113		mg/L		90	30 - 170
Vinyl chloride	0.0125	0.0116		mg/L		93	60 - 144
Xylenes, Total	0.0500	0.0526		mg/L		105	80 - 121
m-Xylene & p-Xylene	0.0250	0.0264		mg/L		106	80 - 120
o-Xylene	0.0250	0.0262		mg/L		105	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: LCS 240-564793/6
Matrix: Water
Analysis Batch: 564793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120
4-Bromofluorobenzene (Surr)	102		56 - 136
1,2-Dichloroethane-d4 (Surr)	105		62 - 137

Lab Sample ID: LCS 240-564830/10
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.00	1.05		mg/L		105	74 - 127
1,2-Dichloroethane	1.00	0.934		mg/L		93	72 - 120
2-Butanone (MEK)	2.00	2.18		mg/L		109	68 - 130
Benzene	1.00	1.04		mg/L		104	80 - 121
Carbon tetrachloride	1.00	0.914		mg/L		91	69 - 120
Chlorobenzene	1.00	0.992		mg/L		99	80 - 120
Chloroform	1.00	1.01		mg/L		101	75 - 120
Tetrachloroethene	1.00	1.03		mg/L		103	74 - 120
Trichloroethene	1.00	0.954		mg/L		95	75 - 120
Vinyl chloride	1.00	0.684		mg/L		68	53 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		71 - 121

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564830/10
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		76 - 120

Lab Sample ID: MB 240-564959/8
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/10/23 13:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/10/23 13:50	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/10/23 13:50	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/10/23 13:50	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/10/23 13:50	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/10/23 13:50	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/10/23 13:50	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/10/23 13:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/10/23 13:50	1
Acetone	ND		0.010	0.0054	mg/L			03/10/23 13:50	1
Benzene	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/10/23 13:50	1
Bromoform	ND		0.0010	0.00076	mg/L			03/10/23 13:50	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/10/23 13:50	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/10/23 13:50	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/10/23 13:50	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/10/23 13:50	1
Chloroform	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/10/23 13:50	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/10/23 13:50	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/10/23 13:50	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/10/23 13:50	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/10/23 13:50	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/10/23 13:50	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/10/23 13:50	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/10/23 13:50	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/10/23 13:50	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/10/23 13:50	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/10/23 13:50	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/10/23 13:50	1
Styrene	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-564959/8
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
Toluene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/10/23 13:50	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/10/23 13:50	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/10/23 13:50	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/10/23 13:50	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/10/23 13:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		78 - 122		03/10/23 13:50	1
Dibromofluoromethane (Surr)	99		73 - 120		03/10/23 13:50	1
4-Bromofluorobenzene (Surr)	81		56 - 136		03/10/23 13:50	1
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		03/10/23 13:50	1

Lab Sample ID: LCS 240-564959/5
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0242		mg/L		97	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0264		mg/L		105	58 - 157
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0264		mg/L		106	51 - 146
1,1,2-Trichloroethane	0.0250	0.0256		mg/L		102	70 - 138
1,1-Dichloroethane	0.0250	0.0229		mg/L		91	72 - 127
1,1-Dichloroethene	0.0250	0.0251		mg/L		101	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0268		mg/L		107	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0232		mg/L		93	53 - 135
Ethylene Dibromide	0.0250	0.0246		mg/L		99	71 - 134
1,2-Dichlorobenzene	0.0250	0.0260		mg/L		104	78 - 120
1,2-Dichloroethane	0.0250	0.0232		mg/L		93	66 - 128
1,2-Dichloropropane	0.0250	0.0237		mg/L		95	75 - 133
1,3-Dichlorobenzene	0.0250	0.0260		mg/L		104	80 - 120
1,4-Dichlorobenzene	0.0250	0.0257		mg/L		103	80 - 120
2-Butanone (MEK)	0.0500	0.0473		mg/L		95	54 - 156
2-Hexanone	0.0500	0.0542		mg/L		108	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0542		mg/L		108	46 - 158
Acetone	0.0500	0.0468		mg/L		94	50 - 149
Benzene	0.0250	0.0247		mg/L		99	77 - 123
Dichlorobromomethane	0.0250	0.0235		mg/L		94	69 - 126
Bromoform	0.0250	0.0249		mg/L		100	57 - 129
Bromomethane	0.0125	0.0137		mg/L		110	36 - 142
Carbon disulfide	0.0250	0.0243		mg/L		97	43 - 140
Carbon tetrachloride	0.0250	0.0246		mg/L		98	55 - 137
Chlorobenzene	0.0250	0.0252		mg/L		101	80 - 121
Chloroethane	0.0125	0.0106		mg/L		85	38 - 152
Chloroform	0.0250	0.0234		mg/L		94	74 - 122
Chloromethane	0.0125	0.0121		mg/L		97	47 - 143

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-564959/5
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.0250	0.0238		mg/L		95	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0240		mg/L		96	64 - 130
Cyclohexane	0.0250	0.0276		mg/L		111	58 - 146
Chlorodibromomethane	0.0250	0.0241		mg/L		96	70 - 124
Dichlorodifluoromethane	0.0125	0.0116		mg/L		93	34 - 153
Ethylbenzene	0.0250	0.0259		mg/L		104	80 - 121
Isopropylbenzene	0.0250	0.0270		mg/L		108	74 - 128
Methyl acetate	0.0500	0.0418		mg/L		84	42 - 169
Methyl tert-butyl ether	0.0250	0.0238		mg/L		95	65 - 126
Methylcyclohexane	0.0250	0.0289		mg/L		116	62 - 136
Methylene Chloride	0.0250	0.0250		mg/L		100	71 - 125
Styrene	0.0250	0.0269		mg/L		108	80 - 135
Tetrachloroethene	0.0250	0.0265		mg/L		106	76 - 123
Toluene	0.0250	0.0256		mg/L		102	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0241		mg/L		97	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0248		mg/L		99	57 - 129
Trichloroethene	0.0250	0.0241		mg/L		97	70 - 122
Trichlorofluoromethane	0.0125	0.0112		mg/L		90	30 - 170
Vinyl chloride	0.0125	0.0116		mg/L		93	60 - 144
Xylenes, Total	0.0500	0.0517		mg/L		103	80 - 121
m-Xylene & p-Xylene	0.0250	0.0260		mg/L		104	80 - 120
o-Xylene	0.0250	0.0257		mg/L		103	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120
4-Bromofluorobenzene (Surr)	94		56 - 136
1,2-Dichloroethane-d4 (Surr)	91		62 - 137

Lab Sample ID: LCS 240-564959/6
Matrix: Water
Analysis Batch: 564959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	90		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120
4-Bromofluorobenzene (Surr)	91		56 - 136
1,2-Dichloroethane-d4 (Surr)	92		62 - 137

Lab Sample ID: LB 240-564696/1-A MB
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.00049	mg/L			03/09/23 14:21	1
1,2-Dichloroethane	ND		0.025	0.00021	mg/L			03/09/23 14:21	1
2-Butanone (MEK)	ND		0.25	0.0012	mg/L			03/09/23 14:21	1
Benzene	ND		0.025	0.00042	mg/L			03/09/23 14:21	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 240-564696/1-A MB
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Carbon tetrachloride	ND		0.025	0.00026	mg/L			03/09/23 14:21	1
Chlorobenzene	ND		0.025	0.00038	mg/L			03/09/23 14:21	1
Chloroform	ND		0.025	0.00047	mg/L			03/09/23 14:21	1
Tetrachloroethene	ND		0.025	0.00044	mg/L			03/09/23 14:21	1
Trichloroethene	ND		0.025	0.00044	mg/L			03/09/23 14:21	1
Vinyl chloride	ND		0.025	0.00045	mg/L			03/09/23 14:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		80 - 120		03/09/23 14:21	1
Dibromofluoromethane (Surr)	101		71 - 121		03/09/23 14:21	1
4-Bromofluorobenzene (Surr)	96		80 - 120		03/09/23 14:21	1
1,2-Dichloroethane-d4 (Surr)	100		76 - 120		03/09/23 14:21	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	ND		1.00	1.06		mg/L		106	72 - 127
1,2-Dichloroethane	ND		1.00	0.937		mg/L		94	70 - 120
2-Butanone (MEK)	0.012	J	2.00	2.31		mg/L		115	76 - 127
Benzene	ND		1.00	1.03		mg/L		103	80 - 124
Carbon tetrachloride	ND		1.00	0.890		mg/L		89	63 - 120
Chlorobenzene	ND		1.00	0.991		mg/L		99	80 - 120
Chloroform	ND		1.00	0.981		mg/L		98	75 - 121
Tetrachloroethene	ND		1.00	1.03		mg/L		103	68 - 120
Trichloroethene	ND		1.00	0.975		mg/L		97	70 - 120
Vinyl chloride	ND		1.00	0.657		mg/L		66	55 - 144

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	95		71 - 121
4-Bromofluorobenzene (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	92		76 - 120

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Result	Qualifier						
1,1-Dichloroethene	ND		1.00	1.03		mg/L		103	72 - 127	2	11
1,2-Dichloroethane	ND		1.00	0.924		mg/L		92	70 - 120	1	10
2-Butanone (MEK)	0.012	J	2.00	2.23		mg/L		111	76 - 127	3	17
Benzene	ND		1.00	1.04		mg/L		104	80 - 124	0	10
Carbon tetrachloride	ND		1.00	0.901		mg/L		90	63 - 120	1	11
Chlorobenzene	ND		1.00	0.977		mg/L		98	80 - 120	1	10
Chloroform	ND		1.00	0.978		mg/L		98	75 - 121	0	10
Tetrachloroethene	ND		1.00	1.01		mg/L		101	68 - 120	2	10

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564830

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene	ND		1.00	0.938		mg/L		94	70 - 120	4	10
Vinyl chloride	ND		1.00	0.704		mg/L		70	55 - 144	7	11
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
Toluene-d8 (Surr)	95		80 - 120								
Dibromofluoromethane (Surr)	96		71 - 121								
4-Bromofluorobenzene (Surr)	93		80 - 120								
1,2-Dichloroethane-d4 (Surr)	91		76 - 120								

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-564907/3-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dichlorobenzene	ND		0.0040	0.00033	mg/L		03/10/23 07:43	03/11/23 09:13	1	
2,4,5-Trichlorophenol	ND		0.0040	0.0020	mg/L		03/10/23 07:43	03/11/23 09:13	1	
2,4,6-Trichlorophenol	ND		0.0040	0.0018	mg/L		03/10/23 07:43	03/11/23 09:13	1	
2,4-Dinitrotoluene	ND		0.0040	0.0021	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Hexachlorobenzene	ND		0.00080	0.00016	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Hexachlorobutadiene	ND		0.0040	0.00054	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Hexachloroethane	ND		0.0040	0.00040	mg/L		03/10/23 07:43	03/11/23 09:13	1	
2-Methylphenol	ND		0.0040	0.00021	mg/L		03/10/23 07:43	03/11/23 09:13	1	
3 & 4 Methylphenol	ND		0.0040	0.00019	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Nitrobenzene	ND		0.0040	0.00051	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Pentachlorophenol	ND		0.016	0.0031	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Pyridine	ND		0.0040	0.00036	mg/L		03/10/23 07:43	03/11/23 09:13	1	
Surrogate	%Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac				
Terphenyl-d14 (Surr)	97		46 - 137	03/10/23 07:43	03/11/23 09:13	1				
Phenol-d5 (Surr)	64		26 - 120	03/10/23 07:43	03/11/23 09:13	1				
Nitrobenzene-d5 (Surr)	77		24 - 120	03/10/23 07:43	03/11/23 09:13	1				
2-Fluorophenol (Surr)	69		19 - 120	03/10/23 07:43	03/11/23 09:13	1				
2-Fluorobiphenyl (Surr)	87		33 - 120	03/10/23 07:43	03/11/23 09:13	1				
2,4,6-Tribromophenol (Surr)	94		10 - 120	03/10/23 07:43	03/11/23 09:13	1				

Lab Sample ID: LCS 240-564907/4-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.0800	0.0562		mg/L		70	40 - 120
2,4,5-Trichlorophenol	0.0800	0.0665		mg/L		83	52 - 123
2,4,6-Trichlorophenol	0.0800	0.0681		mg/L		85	51 - 120
2,4-Dinitrotoluene	0.0800	0.0743		mg/L		93	58 - 125
Hexachlorobenzene	0.0800	0.0538		mg/L		67	55 - 120
Hexachlorobutadiene	0.0800	0.0571		mg/L		71	41 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-564907/4-A
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachloroethane	0.0800	0.0579		mg/L		72	39 - 120
2-Methylphenol	0.0800	0.0564		mg/L		71	45 - 120
3 & 4 Methylphenol	0.0800	0.0536		mg/L		67	40 - 120
Nitrobenzene	0.0800	0.0609		mg/L		76	47 - 120
Pentachlorophenol	0.160	0.134		mg/L		84	19 - 132
Pyridine	0.160	0.0857		mg/L		54	10 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	91		46 - 137
Phenol-d5 (Surr)	61		26 - 120
Nitrobenzene-d5 (Surr)	80		24 - 120
2-Fluorophenol (Surr)	66		19 - 120
2-Fluorobiphenyl (Surr)	84		33 - 120
2,4,6-Tribromophenol (Surr)	93		10 - 120

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 565032

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564907

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	ND		0.0800	0.0629		mg/L		79	37 - 120
2,4,5-Trichlorophenol	ND		0.0800	0.0718		mg/L		90	25 - 128
2,4,6-Trichlorophenol	ND		0.0800	0.0642		mg/L		80	23 - 122
2,4-Dinitrotoluene	ND		0.0800	0.0861		mg/L		108	27 - 127
Hexachlorobenzene	ND		0.0800	0.0574		mg/L		72	18 - 123
Hexachlorobutadiene	ND		0.0800	0.0576		mg/L		72	10 - 120
Hexachloroethane	ND		0.0800	0.0596		mg/L		75	10 - 120
2-Methylphenol	ND		0.0800	0.0591		mg/L		74	22 - 120
3 & 4 Methylphenol	ND		0.0800	0.0601		mg/L		75	16 - 123
Nitrobenzene	ND		0.0800	0.0610		mg/L		76	26 - 120
Pentachlorophenol	ND		0.160	0.137		mg/L		86	10 - 132
Pyridine	ND		0.160	0.0906		mg/L		57	10 - 120

Surrogate	MS		Limits
	%Recovery	Qualifier	
Terphenyl-d14 (Surr)	95		46 - 137
Phenol-d5 (Surr)	64		26 - 120
Nitrobenzene-d5 (Surr)	80		24 - 120
2-Fluorophenol (Surr)	68		19 - 120
2-Fluorobiphenyl (Surr)	89		33 - 120
2,4,6-Tribromophenol (Surr)	113		10 - 120

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-564744/2-A
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564744

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:19	1
Barium	ND		0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:19	1
Cadmium	ND		0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:19	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:19	1
Lead	ND		0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:19	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:19	1
Silver	ND		0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:19	1

Lab Sample ID: LCS 240-564744/3-A
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	2.00	1.91		mg/L		95	50 - 150
Cadmium	1.00	1.02		mg/L		102	50 - 150
Chromium	1.00	1.00		mg/L		100	50 - 150
Lead	1.00	0.919		mg/L		92	50 - 150
Selenium	2.00	2.14		mg/L		107	50 - 150
Silver	0.100	0.108		mg/L		108	50 - 150

Lab Sample ID: LB 240-564694/1-B
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564744

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.050	0.0041	mg/L		03/09/23 14:00	03/10/23 11:14	1
Barium	ND		0.50	0.0013	mg/L		03/09/23 14:00	03/10/23 11:14	1
Cadmium	ND		0.050	0.00020	mg/L		03/09/23 14:00	03/10/23 11:14	1
Chromium	ND		0.050	0.0040	mg/L		03/09/23 14:00	03/10/23 11:14	1
Lead	ND		0.050	0.0028	mg/L		03/09/23 14:00	03/10/23 11:14	1
Selenium	ND		0.050	0.0060	mg/L		03/09/23 14:00	03/10/23 11:14	1
Silver	ND		0.050	0.00062	mg/L		03/09/23 14:00	03/10/23 11:14	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564744

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Arsenic	0.0054	J	5.00	5.06		mg/L		101	75 - 125
Barium	0.099	J	50.0	47.7		mg/L		95	75 - 125
Cadmium	0.00027	J	1.00	0.982		mg/L		98	75 - 125
Chromium	ND		5.00	4.90		mg/L		98	75 - 125
Lead	0.0071	J	5.00	4.71		mg/L		94	75 - 125
Selenium	ND		1.00	1.02		mg/L		102	75 - 125
Silver	0.00082	J	1.00	0.991		mg/L		99	75 - 125

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 564983

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564744

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Arsenic	0.0054	J	5.00	5.15		mg/L		103	75 - 125	2	20	
Barium	0.099	J	50.0	48.3		mg/L		96	75 - 125	1	20	
Cadmium	0.00027	J	1.00	0.999		mg/L		100	75 - 125	2	20	
Chromium	ND		5.00	5.00		mg/L		100	75 - 125	2	20	
Lead	0.0071	J	5.00	4.78		mg/L		95	75 - 125	1	20	
Selenium	ND		1.00	1.03		mg/L		103	75 - 125	1	20	
Silver	0.00082	J	1.00	1.01		mg/L		101	75 - 125	2	20	

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-564745/2-A
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564745

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:13	1

Lab Sample ID: LCS 240-564745/3-A
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564745

Analyte	Spike	LCS		Unit	D	%Rec	%Rec	
		Added	Result				Limits	RPD
Mercury	0.00500	0.00533		mg/L		107	80 - 120	

Lab Sample ID: LB 240-564694/1-C
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 564745

Analyte	LB	LB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.0020	0.00013	mg/L		03/09/23 14:00	03/10/23 14:11	1

Lab Sample ID: 240-181523-7 MS
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564745

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	RPD
Mercury	ND		0.00500	0.00458		mg/L		92	80 - 120	

Lab Sample ID: 240-181523-7 MSD
Matrix: Solid
Analysis Batch: 565010

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418
Prep Type: TCLP
Prep Batch: 564745

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Mercury	ND		0.00500	0.00510		mg/L		102	80 - 120	11	20	

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

GC/MS VOA

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Leach Batch: 564696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
LB 240-564696/1-A MB	Method Blank	TCLP	Solid	1311	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Analysis Batch: 564793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-1	WC-251362	Total/NA	Water	8260D	
240-181523-2	WC-537A	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-4	WC-AL4944	Total/NA	Water	8260D	
240-181523-5	WC-AL4216	Total/NA	Water	8260D	
240-181523-6	WC-531A	Total/NA	Water	8260D	
240-181523-8	TRIP BLANK	Total/NA	Water	8260D	
MB 240-564793/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564793/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564793/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 564830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696
LB 240-564696/1-A MB	Method Blank	TCLP	Solid	8260D	564696
LCS 240-564830/10	Lab Control Sample	Total/NA	Solid	8260D	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8260D	564696

Analysis Batch: 564959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-1	WC-251362	Total/NA	Water	8260D	
240-181523-2	WC-537A	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-3	WC-AL5679	Total/NA	Water	8260D	
240-181523-4	WC-AL4944	Total/NA	Water	8260D	
240-181523-5	WC-AL4216	Total/NA	Water	8260D	
240-181523-6	WC-531A	Total/NA	Water	8260D	
MB 240-564959/8	Method Blank	Total/NA	Water	8260D	
LCS 240-564959/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-564959/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

GC/MS Semi VOA

Leach Batch: 564694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Prep Batch: 564907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3510C	564694
MB 240-564907/3-A	Method Blank	Total/NA	Solid	3510C	
LCS 240-564907/4-A	Lab Control Sample	Total/NA	Solid	3510C	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3510C	564694

Analysis Batch: 565032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8270E	564907
MB 240-564907/3-A	Method Blank	Total/NA	Solid	8270E	564907
LCS 240-564907/4-A	Lab Control Sample	Total/NA	Solid	8270E	564907
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	8270E	564907

Metals

Composite Batch: 564683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	Composite	

Leach Batch: 564694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
LB 240-564694/1-B	Method Blank	TCLP	Solid	1311	
LB 240-564694/1-C	Method Blank	TCLP	Solid	1311	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	1311	564683

Prep Batch: 564744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694
LB 240-564694/1-B	Method Blank	TCLP	Solid	3010A	564694
MB 240-564744/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 240-564744/3-A	Lab Control Sample	Total/NA	Solid	3010A	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	3010A	564694

Prep Batch: 564745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694
LB 240-564694/1-C	Method Blank	TCLP	Solid	7470A	564694
MB 240-564745/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 240-564745/3-A	Lab Control Sample	Total/NA	Solid	7470A	
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564694

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Metals

Analysis Batch: 564983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744
LB 240-564694/1-B	Method Blank	TCLP	Solid	6010D	564744
MB 240-564744/2-A	Method Blank	Total/NA	Solid	6010D	564744
LCS 240-564744/3-A	Lab Control Sample	Total/NA	Solid	6010D	564744
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	6010D	564744

Analysis Batch: 565010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-181523-7	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745
LB 240-564694/1-C	Method Blank	TCLP	Solid	7470A	564745
MB 240-564745/2-A	Method Blank	Total/NA	Solid	7470A	564745
LCS 240-564745/3-A	Lab Control Sample	Total/NA	Solid	7470A	564745
240-181523-7 MS	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745
240-181523-7 MSD	WC-SB1833, SB1450, SB2446, SB1905, SB2418	TCLP	Solid	7470A	564745

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-251362

Lab Sample ID: 240-181523-1

Date Collected: 03/07/23 15:30

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 16:53
Total/NA	Analysis	8260D		2	564959	SAM	EET CAN	03/10/23 14:14

Client Sample ID: WC-537A

Lab Sample ID: 240-181523-2

Date Collected: 03/07/23 15:40

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 17:17
Total/NA	Analysis	8260D		10	564959	SAM	EET CAN	03/10/23 14:38

Client Sample ID: WC-AL5679

Lab Sample ID: 240-181523-3

Date Collected: 03/07/23 15:58

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 17:41
Total/NA	Analysis	8260D		4	564959	SAM	EET CAN	03/10/23 15:03
Total/NA	Analysis	8260D		1	564959	SAM	EET CAN	03/10/23 20:12

Client Sample ID: WC-AL4944

Lab Sample ID: 240-181523-4

Date Collected: 03/07/23 15:50

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:05
Total/NA	Analysis	8260D		50	564959	SAM	EET CAN	03/10/23 15:27

Client Sample ID: WC-AL4216

Lab Sample ID: 240-181523-5

Date Collected: 03/07/23 16:05

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:28
Total/NA	Analysis	8260D		20	564959	SAM	EET CAN	03/10/23 15:51

Client Sample ID: WC-531A

Lab Sample ID: 240-181523-6

Date Collected: 03/07/23 16:15

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 18:52
Total/NA	Analysis	8260D		20	564959	SAM	EET CAN	03/10/23 16:16

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-181523-1

Client Sample ID: WC-SB1833, SB1450, SB2446, SB1905, SB2418

Lab Sample ID: 240-181523-7

Date Collected: 03/07/23 17:15

Matrix: Solid

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564696	DRJ	EET CAN	03/08/23 15:45 - 03/09/23 09:00 ¹
TCLP	Analysis	8260D		1	564830	AJS	EET CAN	03/09/23 15:31
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	3510C			564907	MDH	EET CAN	03/10/23 07:43
TCLP	Analysis	8270E		1	565032	MRU	EET CAN	03/11/23 10:48
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	3010A			564744	MRL	EET CAN	03/09/23 14:00
TCLP	Analysis	6010D		1	564983	RKT	EET CAN	03/10/23 11:27
TCLP	Composite	Composite			564683	DRJ	EET CAN	03/08/23 14:40
TCLP	Leach	1311			564694	DRJ	EET CAN	03/08/23 16:20 - 03/09/23 08:45 ¹
TCLP	Prep	7470A			564745	MRL	EET CAN	03/09/23 14:00
TCLP	Analysis	7470A		1	565010	DSH	EET CAN	03/10/23 14:17

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-181523-8

Date Collected: 03/07/23 00:00

Matrix: Water

Date Received: 03/08/23 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	564793	SAM	EET CAN	03/09/23 14:54

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-181523-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23 *
Ohio VAP	State	CL0024	02-27-23 *
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Eurofins - Canton Sample Receipt Form/Narrative Login # : 181523
Barberton Facility

Client Arcadis Site Name NSRR-ER Cooler unpacked by: [Signature]
Cooler Received on 3-8-23 Opened on 3-8-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 2.6 °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N) # of containers (Y/N), and sample type of grab/comp (Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? [Signature] Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? [Signature] Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0104201G Yes No
17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by: _____
TB included. Not on COC. Logged last. [Signature] 3-8-23

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/22/2023 2:53:51 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182044-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/22/2023 2:53:51 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	25
Lab Chronicle	27
Certification Summary	28
Chain of Custody	29

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Eurofins Canton

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Job ID: 240-182044-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182044-1

Receipt

The sample was received on 3/16/2023 7:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-565915 recovered above the upper control limit for Dichloro-Difluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-257761-STORM SEWER (240-182044-1), (CCV 240-565915/4), (CCVIS 240-565915/3), (LCS 240-565915/5), (LCS 240-565915/6) and (MB 240-565915/8).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: WC-257761-STORM SEWER (240-182044-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-565863.

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-565890 recovered above the upper control limit for 2-Methylphenol and Phenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: WC-257761-STORM SEWER (240-182044-1).

Method 8270E: The following sample was diluted to bring the concentration of target analytes within the calibration range: WC-257761-STORM SEWER (240-182044-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics

Method 8015D_DRO: The following sample required a dilution due to the nature of the sample matrix: WC-257761-STORM SEWER (240-182044-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
2540D-2015	Total Suspended Solids (Dried at 103-105°C)	SM	EET CAN
5310 C-2014	Total Organic Carbon/Persulfate - Ultrav	SM	EET CAN
9040C	pH	SW846	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN
3510C LVI	Liquid-Liquid Extraction (Separatory Funnel) LVI	SW846	EET CAN
3511	Microextraction of Organic Compounds	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182044-1	WC-257761-STORM SEWER	Water	03/16/23 16:00	03/16/23 19:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0043	J	0.010	0.0012	mg/L	1		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	0.0015	J	0.010	0.00099	mg/L	1		8260D	Total/NA
Acetone	0.050		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00088	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Ethylbenzene	0.00087	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Toluene	0.0028		0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.016		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.0054		0.0020	0.00042	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	160000	B	9800	1300	ug/L	20		8015D	Total/NA
Barium	420		200	1.3	ug/L	1		6010D	Total Recoverable
Cadmium	2.3	J	5.0	0.20	ug/L	1		6010D	Total Recoverable
Chromium	65		10	4.0	ug/L	1		6010D	Total Recoverable
Arsenic	50		15	4.1	ug/L	1		6010D	Total Recoverable
Lead	130		10	2.8	ug/L	1		6010D	Total Recoverable
Mercury	0.41		0.20	0.13	ug/L	1		7470A	Total/NA
Total Suspended Solids	1200		73	18	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	830		50	17	mg/L	50		5310 C-2014	Total/NA
corrosivity by pH	7.7	HF	0.1	0.1	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Date Collected: 03/16/23 16:00

Matrix: Water

Date Received: 03/16/23 19:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/17/23 15:07	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/17/23 15:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/17/23 15:07	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/17/23 15:07	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/17/23 15:07	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/17/23 15:07	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/17/23 15:07	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/17/23 15:07	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/17/23 15:07	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/17/23 15:07	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/17/23 15:07	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/17/23 15:07	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/17/23 15:07	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/17/23 15:07	1
2-Butanone (MEK)	0.0043	J	0.010	0.0012	mg/L			03/17/23 15:07	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/17/23 15:07	1
4-Methyl-2-pentanone (MIBK)	0.0015	J	0.010	0.00099	mg/L			03/17/23 15:07	1
Acetone	0.050		0.010	0.0054	mg/L			03/17/23 15:07	1
Benzene	0.00088	J	0.0010	0.00042	mg/L			03/17/23 15:07	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/17/23 15:07	1
Bromoform	ND		0.0010	0.00076	mg/L			03/17/23 15:07	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/17/23 15:07	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/17/23 15:07	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/17/23 15:07	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/17/23 15:07	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/17/23 15:07	1
Chloroform	ND		0.0010	0.00047	mg/L			03/17/23 15:07	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/17/23 15:07	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/17/23 15:07	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/17/23 15:07	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/17/23 15:07	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/17/23 15:07	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/17/23 15:07	1
Ethylbenzene	0.00087	J	0.0010	0.00042	mg/L			03/17/23 15:07	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/17/23 15:07	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/17/23 15:07	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/17/23 15:07	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/17/23 15:07	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/17/23 15:07	1
Styrene	ND		0.0010	0.00045	mg/L			03/17/23 15:07	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/17/23 15:07	1
Toluene	0.0028		0.0010	0.00044	mg/L			03/17/23 15:07	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/17/23 15:07	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/17/23 15:07	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/17/23 15:07	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/17/23 15:07	1
Vinyl chloride	0.016		0.0010	0.00045	mg/L			03/17/23 15:07	1
Xylenes, Total	0.0054		0.0020	0.00042	mg/L			03/17/23 15:07	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Date Collected: 03/16/23 16:00

Matrix: Water

Date Received: 03/16/23 19:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	110		78 - 122		03/17/23 15:07	1
Toluene-d8 (Surr)	89		78 - 122		03/18/23 15:09	33.333
Dibromofluoromethane (Surr)	101		73 - 120		03/17/23 15:07	1
Dibromofluoromethane (Surr)	101		73 - 120		03/18/23 15:09	33.333
4-Bromofluorobenzene (Surr)	112		56 - 136		03/17/23 15:07	1
4-Bromofluorobenzene (Surr)	93		56 - 136		03/18/23 15:09	33.333
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		03/17/23 15:07	1
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		03/18/23 15:09	33.333

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.050	0.025	mg/L		03/17/23 14:39	03/18/23 07:18	50
bis (2-chloroisopropyl) ether	ND		0.050	0.028	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4,5-Trichlorophenol	ND		0.25	0.099	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4,6-Trichlorophenol	ND		0.25	0.090	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4-Dichlorophenol	ND		0.10	0.013	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4-Dimethylphenol	ND		0.10	0.026	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4-Dinitrophenol	ND		0.50	0.31	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,4-Dinitrotoluene	ND		0.25	0.10	mg/L		03/17/23 14:39	03/18/23 07:18	50
2,6-Dinitrotoluene	ND		0.25	0.11	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Chloronaphthalene	ND		0.050	0.024	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Chlorophenol	ND		0.050	0.014	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Methylnaphthalene	ND		0.010	0.0056	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Methylphenol	ND		0.050	0.010	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Nitroaniline	ND		0.10	0.026	mg/L		03/17/23 14:39	03/18/23 07:18	50
2-Nitrophenol	ND		0.10	0.028	mg/L		03/17/23 14:39	03/18/23 07:18	50
3,3'-Dichlorobenzidine	ND		0.25	0.058	mg/L		03/17/23 14:39	03/18/23 07:18	50
3-Nitroaniline	ND		0.10	0.028	mg/L		03/17/23 14:39	03/18/23 07:18	50
4,6-Dinitro-2-methylphenol	ND		0.25	0.14	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Bromophenyl phenyl ether	ND		0.10	0.025	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Chloro-3-methylphenol	ND		0.10	0.015	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Chloroaniline	ND		0.10	0.016	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Chlorophenyl phenyl ether	ND		0.10	0.028	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Nitroaniline	ND		0.10	0.046	mg/L		03/17/23 14:39	03/18/23 07:18	50
4-Nitrophenol	ND		0.50	0.11	mg/L		03/17/23 14:39	03/18/23 07:18	50
Acenaphthene	ND		0.010	0.0086	mg/L		03/17/23 14:39	03/18/23 07:18	50
Acenaphthylene	ND		0.010	0.0063	mg/L		03/17/23 14:39	03/18/23 07:18	50
Acetophenone	ND		0.050	0.018	mg/L		03/17/23 14:39	03/18/23 07:18	50
Anthracene	ND		0.010	0.0068	mg/L		03/17/23 14:39	03/18/23 07:18	50
Atrazine	ND		0.10	0.048	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzaldehyde	ND		0.10	0.038	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzo[a]anthracene	ND		0.010	0.0086	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzo[a]pyrene	ND		0.010	0.0087	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzo[b]fluoranthene	ND		0.010	0.0077	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzo[g,h,i]perylene	ND		0.010	0.0089	mg/L		03/17/23 14:39	03/18/23 07:18	50
Benzo[k]fluoranthene	ND		0.010	0.0070	mg/L		03/17/23 14:39	03/18/23 07:18	50
Bis(2-chloroethoxy)methane	ND		0.050	0.023	mg/L		03/17/23 14:39	03/18/23 07:18	50
Bis(2-chloroethyl)ether	ND		0.050	0.020	mg/L		03/17/23 14:39	03/18/23 07:18	50
Bis(2-ethylhexyl) phthalate	ND		0.25	0.11	mg/L		03/17/23 14:39	03/18/23 07:18	50
Butyl benzyl phthalate	ND		0.10	0.033	mg/L		03/17/23 14:39	03/18/23 07:18	50

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Date Collected: 03/16/23 16:00

Matrix: Water

Date Received: 03/16/23 19:00

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	ND		0.25	0.047	mg/L		03/17/23 14:39	03/18/23 07:18	50
Carbazole	ND		0.050	0.025	mg/L		03/17/23 14:39	03/18/23 07:18	50
Chrysene	ND		0.010	0.0093	mg/L		03/17/23 14:39	03/18/23 07:18	50
Dibenz(a,h)anthracene	ND		0.010	0.0076	mg/L		03/17/23 14:39	03/18/23 07:18	50
Dibenzofuran	ND		0.050	0.028	mg/L		03/17/23 14:39	03/18/23 07:18	50
Diethyl phthalate	ND		0.25	0.19	mg/L		03/17/23 14:39	03/18/23 07:18	50
Dimethyl phthalate	ND		0.10	0.026	mg/L		03/17/23 14:39	03/18/23 07:18	50
Di-n-butyl phthalate	ND		0.25	0.090	mg/L		03/17/23 14:39	03/18/23 07:18	50
Di-n-octyl phthalate	ND		0.10	0.041	mg/L		03/17/23 14:39	03/18/23 07:18	50
Fluoranthene	ND		0.010	0.0080	mg/L		03/17/23 14:39	03/18/23 07:18	50
Fluorene	ND		0.010	0.0085	mg/L		03/17/23 14:39	03/18/23 07:18	50
Hexachlorobenzene	ND		0.010	0.0081	mg/L		03/17/23 14:39	03/18/23 07:18	50
Hexachlorobutadiene	ND		0.050	0.027	mg/L		03/17/23 14:39	03/18/23 07:18	50
Hexachlorocyclopentadiene	ND		0.50	0.088	mg/L		03/17/23 14:39	03/18/23 07:18	50
Hexachloroethane	ND		0.050	0.020	mg/L		03/17/23 14:39	03/18/23 07:18	50
Indeno[1,2,3-cd]pyrene	ND		0.010	0.0068	mg/L		03/17/23 14:39	03/18/23 07:18	50
Isophorone	ND		0.050	0.016	mg/L		03/17/23 14:39	03/18/23 07:18	50
N-Nitrosodi-n-propylamine	ND		0.050	0.013	mg/L		03/17/23 14:39	03/18/23 07:18	50
N-Nitrosodiphenylamine	ND		0.050	0.022	mg/L		03/17/23 14:39	03/18/23 07:18	50
Naphthalene	ND		0.010	0.0055	mg/L		03/17/23 14:39	03/18/23 07:18	50
Nitrobenzene	ND		0.050	0.026	mg/L		03/17/23 14:39	03/18/23 07:18	50
Pentachlorophenol	ND		0.50	0.16	mg/L		03/17/23 14:39	03/18/23 07:18	50
Phenanthrene	ND		0.010	0.0084	mg/L		03/17/23 14:39	03/18/23 07:18	50
Phenol	ND		0.050	0.0064	mg/L		03/17/23 14:39	03/18/23 07:18	50
Pyrene	ND		0.010	0.0088	mg/L		03/17/23 14:39	03/18/23 07:18	50
3 & 4 Methylphenol	ND		0.10	0.0096	mg/L		03/17/23 14:39	03/18/23 07:18	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/17/23 14:39	03/18/23 07:18	50
Phenol-d5 (Surr)	33		26 - 120	03/17/23 14:39	03/18/23 07:18	50
Nitrobenzene-d5 (Surr)	42		24 - 120	03/17/23 14:39	03/18/23 07:18	50
2-Fluorophenol (Surr)	41		19 - 120	03/17/23 14:39	03/18/23 07:18	50
2-Fluorobiphenyl (Surr)	47		33 - 120	03/17/23 14:39	03/18/23 07:18	50
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/17/23 14:39	03/18/23 07:18	50

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/17/23 14:39	03/18/23 09:15	333.333
Phenol-d5 (Surr)	0	S1-	26 - 120	03/17/23 14:39	03/18/23 09:15	333.333
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/17/23 14:39	03/18/23 09:15	333.333
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/17/23 14:39	03/18/23 09:15	333.333
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/17/23 14:39	03/18/23 09:15	333.333
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/17/23 14:39	03/18/23 09:15	333.333

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Date Collected: 03/16/23 16:00

Matrix: Water

Date Received: 03/16/23 19:00

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	160000	B	9800	1300	ug/L		03/20/23 06:22	03/20/23 12:05	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	37	S1-	52 - 121				03/20/23 06:22	03/20/23 12:05	20

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	420		200	1.3	ug/L		03/17/23 09:50	03/20/23 13:02	1
Cadmium	2.3	J	5.0	0.20	ug/L		03/17/23 09:50	03/20/23 13:02	1
Chromium	65		10	4.0	ug/L		03/17/23 09:50	03/20/23 13:02	1
Silver	ND		10	0.62	ug/L		03/17/23 09:50	03/20/23 13:02	1
Arsenic	50		15	4.1	ug/L		03/17/23 09:50	03/20/23 13:02	1
Lead	130		10	2.8	ug/L		03/17/23 09:50	03/20/23 13:02	1
Selenium	ND		20	6.0	ug/L		03/17/23 09:50	03/20/23 13:02	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.41		0.20	0.13	ug/L		03/17/23 11:00	03/20/23 15:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D-2015)	1200		73	18	mg/L			03/21/23 10:23	1
Total Organic Carbon (SM 5310 C-2014)	830		50	17	mg/L			03/17/23 18:36	50
corrosivity by pH (SW846 9040C)	7.7	HF	0.1	0.1	SU			03/17/23 17:16	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-182044-1	WC-257761-STORM SEWER	110	101	112	96
240-182044-1	WC-257761-STORM SEWER	89	101	93	93
LCS 240-565809/5	Lab Control Sample	105	102	110	99
LCS 240-565809/6	Lab Control Sample	104	101	114	101
LCS 240-565915/5	Lab Control Sample	97	95	94	87
LCS 240-565915/6	Lab Control Sample	88	97	93	91
MB 240-565809/9	Method Blank	105	102	111	100
MB 240-565915/8	Method Blank	89	102	85	94

Surrogate Legend
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182044-1 - RA	WC-257761-STORM SEWER	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-182044-1	WC-257761-STORM SEWER	0 S1-	33	42	41	47	0 S1-
LCS 240-565863/3-A	Lab Control Sample	83	80	73	116	77	82
MB 240-565863/2-A	Method Blank	100	77	78	87	83	78

Surrogate Legend
TPHL = Terphenyl-d14 (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
2FP = 2-Fluorophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	OTPH
		(52-121)
240-182044-1	WC-257761-STORM SEWER	37 S1-
LCS 240-565980/2-A	Lab Control Sample	82
MB 240-565980/1-A	Method Blank	63

Surrogate Legend
OTPH = o-Terphenyl

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-565809/9
Matrix: Water
Analysis Batch: 565809

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/17/23 14:19	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/17/23 14:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/17/23 14:19	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/17/23 14:19	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/17/23 14:19	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/17/23 14:19	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/17/23 14:19	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/17/23 14:19	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/17/23 14:19	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/17/23 14:19	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/17/23 14:19	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/17/23 14:19	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/17/23 14:19	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/17/23 14:19	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/17/23 14:19	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/17/23 14:19	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/17/23 14:19	1
Acetone	ND		0.010	0.0054	mg/L			03/17/23 14:19	1
Benzene	ND		0.0010	0.00042	mg/L			03/17/23 14:19	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/17/23 14:19	1
Bromoform	ND		0.0010	0.00076	mg/L			03/17/23 14:19	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/17/23 14:19	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/17/23 14:19	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/17/23 14:19	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/17/23 14:19	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/17/23 14:19	1
Chloroform	ND		0.0010	0.00047	mg/L			03/17/23 14:19	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/17/23 14:19	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/17/23 14:19	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/17/23 14:19	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/17/23 14:19	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/17/23 14:19	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/17/23 14:19	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/17/23 14:19	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/17/23 14:19	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/17/23 14:19	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/17/23 14:19	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/17/23 14:19	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/17/23 14:19	1
Styrene	ND		0.0010	0.00045	mg/L			03/17/23 14:19	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/17/23 14:19	1
Toluene	ND		0.0010	0.00044	mg/L			03/17/23 14:19	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/17/23 14:19	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/17/23 14:19	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/17/23 14:19	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/17/23 14:19	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/17/23 14:19	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/17/23 14:19	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565809/9
Matrix: Water
Analysis Batch: 565809

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		78 - 122		03/17/23 14:19	1
Dibromofluoromethane (Surr)	102		73 - 120		03/17/23 14:19	1
4-Bromofluorobenzene (Surr)	111		56 - 136		03/17/23 14:19	1
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		03/17/23 14:19	1

Lab Sample ID: LCS 240-565809/5
Matrix: Water
Analysis Batch: 565809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
1,1,1-Trichloroethane	0.0200	0.0188		mg/L		94	64 - 131
1,1,1,2-Tetrachloroethane	0.0200	0.0205		mg/L		102	58 - 157
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0200	0.0174		mg/L		87	51 - 146
1,1,2-Trichloroethane	0.0200	0.0192		mg/L		96	70 - 138
1,1-Dichloroethane	0.0200	0.0184		mg/L		92	72 - 127
1,1-Dichloroethene	0.0200	0.0179		mg/L		90	63 - 134
1,2,4-Trichlorobenzene	0.0200	0.0188		mg/L		94	44 - 147
1,2-Dibromo-3-Chloropropane	0.0200	0.0183		mg/L		91	53 - 135
Ethylene Dibromide	0.0200	0.0188		mg/L		94	71 - 134
1,2-Dichlorobenzene	0.0200	0.0188		mg/L		94	78 - 120
1,2-Dichloroethane	0.0200	0.0192		mg/L		96	66 - 128
1,2-Dichloropropane	0.0200	0.0190		mg/L		95	75 - 133
1,3-Dichlorobenzene	0.0200	0.0187		mg/L		94	80 - 120
1,4-Dichlorobenzene	0.0200	0.0188		mg/L		94	80 - 120
2-Butanone (MEK)	0.0400	0.0385		mg/L		96	54 - 156
2-Hexanone	0.0400	0.0421		mg/L		105	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0400	0.0407		mg/L		102	46 - 158
Acetone	0.0400	0.0376		mg/L		94	50 - 149
Benzene	0.0200	0.0185		mg/L		92	77 - 123
Dichlorobromomethane	0.0200	0.0196		mg/L		98	69 - 126
Bromoform	0.0200	0.0192		mg/L		96	57 - 129
Bromomethane	0.0200	0.0184		mg/L		92	36 - 142
Carbon disulfide	0.0200	0.0167		mg/L		84	43 - 140
Carbon tetrachloride	0.0200	0.0186		mg/L		93	55 - 137
Chlorobenzene	0.0200	0.0186		mg/L		93	80 - 121
Chloroethane	0.0200	0.0185		mg/L		92	38 - 152
Chloroform	0.0200	0.0188		mg/L		94	74 - 122
Chloromethane	0.0200	0.0182		mg/L		91	47 - 143
cis-1,2-Dichloroethene	0.0200	0.0181		mg/L		91	77 - 123
cis-1,3-Dichloropropene	0.0200	0.0187		mg/L		94	64 - 130
Cyclohexane	0.0200	0.0178		mg/L		89	58 - 146
Chlorodibromomethane	0.0200	0.0186		mg/L		93	70 - 124
Dichlorodifluoromethane	0.0200	0.0158		mg/L		79	34 - 153
Ethylbenzene	0.0200	0.0188		mg/L		94	80 - 121
Isopropylbenzene	0.0200	0.0187		mg/L		94	74 - 128
Methyl acetate	0.0400	0.0373		mg/L		93	42 - 169
Methyl tert-butyl ether	0.0200	0.0186		mg/L		93	65 - 126
Methylcyclohexane	0.0200	0.0186		mg/L		93	62 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565809/5
Matrix: Water
Analysis Batch: 565809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0200	0.0175		mg/L		88	71 - 125
Styrene	0.0200	0.0187		mg/L		94	80 - 135
Tetrachloroethene	0.0200	0.0181		mg/L		90	76 - 123
Toluene	0.0200	0.0185		mg/L		93	80 - 123
trans-1,2-Dichloroethene	0.0200	0.0185		mg/L		93	75 - 124
trans-1,3-Dichloropropene	0.0200	0.0195		mg/L		97	57 - 129
Trichloroethene	0.0200	0.0175		mg/L		88	70 - 122
Trichlorofluoromethane	0.0200	0.0183		mg/L		92	30 - 170
Vinyl chloride	0.0200	0.0181		mg/L		91	60 - 144
Xylenes, Total	0.0400	0.0372		mg/L		93	80 - 121
m-Xylene & p-Xylene	0.0200	0.0186		mg/L		93	80 - 120
o-Xylene	0.0200	0.0186		mg/L		93	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120
4-Bromofluorobenzene (Surr)	110		56 - 136
1,2-Dichloroethane-d4 (Surr)	99		62 - 137

Lab Sample ID: LCS 240-565809/6
Matrix: Water
Analysis Batch: 565809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120
4-Bromofluorobenzene (Surr)	114		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: MB 240-565915/8
Matrix: Water
Analysis Batch: 565915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/18/23 13:34	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/18/23 13:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/18/23 13:34	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/18/23 13:34	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/18/23 13:34	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/18/23 13:34	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/18/23 13:34	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/18/23 13:34	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/18/23 13:34	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/18/23 13:34	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/18/23 13:34	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/18/23 13:34	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/18/23 13:34	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/18/23 13:34	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-565915/8
Matrix: Water
Analysis Batch: 565915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/18/23 13:34	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/18/23 13:34	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/18/23 13:34	1
Acetone	ND		0.010	0.0054	mg/L			03/18/23 13:34	1
Benzene	ND		0.0010	0.00042	mg/L			03/18/23 13:34	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/18/23 13:34	1
Bromoform	ND		0.0010	0.00076	mg/L			03/18/23 13:34	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/18/23 13:34	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/18/23 13:34	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/18/23 13:34	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/18/23 13:34	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/18/23 13:34	1
Chloroform	ND		0.0010	0.00047	mg/L			03/18/23 13:34	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/18/23 13:34	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/18/23 13:34	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/18/23 13:34	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/18/23 13:34	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/18/23 13:34	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/18/23 13:34	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/18/23 13:34	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/18/23 13:34	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/18/23 13:34	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/18/23 13:34	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/18/23 13:34	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/18/23 13:34	1
Styrene	ND		0.0010	0.00045	mg/L			03/18/23 13:34	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/18/23 13:34	1
Toluene	ND		0.0010	0.00044	mg/L			03/18/23 13:34	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/18/23 13:34	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/18/23 13:34	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/18/23 13:34	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/18/23 13:34	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/18/23 13:34	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/18/23 13:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		78 - 122		03/18/23 13:34	1
Dibromofluoromethane (Surr)	102		73 - 120		03/18/23 13:34	1
4-Bromofluorobenzene (Surr)	85		56 - 136		03/18/23 13:34	1
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		03/18/23 13:34	1

Lab Sample ID: LCS 240-565915/5
Matrix: Water
Analysis Batch: 565915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0235		mg/L		94	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0275		mg/L		110	58 - 157

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-565915/5

Matrix: Water

Analysis Batch: 565915

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0253		mg/L		101	51 - 146
1,1,2-Trichloroethane	0.0250	0.0255		mg/L		102	70 - 138
1,1-Dichloroethane	0.0250	0.0225		mg/L		90	72 - 127
1,1-Dichloroethene	0.0250	0.0244		mg/L		98	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0267		mg/L		107	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0239		mg/L		96	53 - 135
Ethylene Dibromide	0.0250	0.0248		mg/L		99	71 - 134
1,2-Dichlorobenzene	0.0250	0.0267		mg/L		107	78 - 120
1,2-Dichloroethane	0.0250	0.0225		mg/L		90	66 - 128
1,2-Dichloropropane	0.0250	0.0235		mg/L		94	75 - 133
1,3-Dichlorobenzene	0.0250	0.0265		mg/L		106	80 - 120
1,4-Dichlorobenzene	0.0250	0.0263		mg/L		105	80 - 120
2-Butanone (MEK)	0.0500	0.0468		mg/L		94	54 - 156
2-Hexanone	0.0500	0.0519		mg/L		104	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0512		mg/L		102	46 - 158
Acetone	0.0500	0.0481		mg/L		96	50 - 149
Benzene	0.0250	0.0246		mg/L		98	77 - 123
Dichlorobromomethane	0.0250	0.0233		mg/L		93	69 - 126
Bromoform	0.0250	0.0243		mg/L		97	57 - 129
Bromomethane	0.0125	0.0121		mg/L		97	36 - 142
Carbon disulfide	0.0250	0.0229		mg/L		91	43 - 140
Carbon tetrachloride	0.0250	0.0235		mg/L		94	55 - 137
Chlorobenzene	0.0250	0.0254		mg/L		102	80 - 121
Chloroethane	0.0125	0.0113		mg/L		91	38 - 152
Chloroform	0.0250	0.0235		mg/L		94	74 - 122
Chloromethane	0.0125	0.0137		mg/L		109	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0238		mg/L		95	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0237		mg/L		95	64 - 130
Cyclohexane	0.0250	0.0263		mg/L		105	58 - 146
Chlorodibromomethane	0.0250	0.0233		mg/L		93	70 - 124
Dichlorodifluoromethane	0.0125	0.0123		mg/L		98	34 - 153
Ethylbenzene	0.0250	0.0259		mg/L		104	80 - 121
Isopropylbenzene	0.0250	0.0270		mg/L		108	74 - 128
Methyl acetate	0.0500	0.0405		mg/L		81	42 - 169
Methyl tert-butyl ether	0.0250	0.0225		mg/L		90	65 - 126
Methylcyclohexane	0.0250	0.0274		mg/L		110	62 - 136
Methylene Chloride	0.0250	0.0236		mg/L		94	71 - 125
Styrene	0.0250	0.0269		mg/L		108	80 - 135
Tetrachloroethene	0.0250	0.0264		mg/L		106	76 - 123
Toluene	0.0250	0.0256		mg/L		102	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0238		mg/L		95	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0239		mg/L		96	57 - 129
Trichloroethene	0.0250	0.0240		mg/L		96	70 - 122
Trichlorofluoromethane	0.0125	0.0115		mg/L		92	30 - 170
Vinyl chloride	0.0125	0.0129		mg/L		103	60 - 144
Xylenes, Total	0.0500	0.0519		mg/L		104	80 - 121
m-Xylene & p-Xylene	0.0250	0.0263		mg/L		105	80 - 120
o-Xylene	0.0250	0.0256		mg/L		103	80 - 123

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120
4-Bromofluorobenzene (Surr)	94		56 - 136
1,2-Dichloroethane-d4 (Surr)	87		62 - 137

Lab Sample ID: LCS 240-565915/6
Matrix: Water
Analysis Batch: 565915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	88		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120
4-Bromofluorobenzene (Surr)	93		56 - 136
1,2-Dichloroethane-d4 (Surr)	91		62 - 137

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-565863/2-A
Matrix: Water
Analysis Batch: 565890

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565863

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.0010	0.00049	mg/L		03/17/23 14:39	03/18/23 06:31	1
bis (2-chloroisopropyl) ether	ND		0.0010	0.00055	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4,5-Trichlorophenol	ND		0.0050	0.0020	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4,6-Trichlorophenol	ND		0.0050	0.0018	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4-Dichlorophenol	ND		0.0020	0.00026	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4-Dimethylphenol	ND		0.0020	0.00052	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4-Dinitrophenol	ND		0.010	0.0062	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,4-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/17/23 14:39	03/18/23 06:31	1
2,6-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Chloronaphthalene	ND		0.0010	0.00048	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Chlorophenol	ND		0.0010	0.00027	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Methylnaphthalene	ND		0.00020	0.00011	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Methylphenol	ND		0.0010	0.00021	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Nitroaniline	ND		0.0020	0.00051	mg/L		03/17/23 14:39	03/18/23 06:31	1
2-Nitrophenol	ND		0.0020	0.00056	mg/L		03/17/23 14:39	03/18/23 06:31	1
3,3'-Dichlorobenzidine	ND		0.0050	0.0012	mg/L		03/17/23 14:39	03/18/23 06:31	1
3-Nitroaniline	ND		0.0020	0.00057	mg/L		03/17/23 14:39	03/18/23 06:31	1
4,6-Dinitro-2-methylphenol	ND		0.0050	0.0028	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Bromophenyl phenyl ether	ND		0.0020	0.00050	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Chloro-3-methylphenol	ND		0.0020	0.00030	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Chloroaniline	ND		0.0020	0.00032	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Chlorophenyl phenyl ether	ND		0.0020	0.00055	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Nitroaniline	ND		0.0020	0.00092	mg/L		03/17/23 14:39	03/18/23 06:31	1
4-Nitrophenol	ND		0.010	0.0022	mg/L		03/17/23 14:39	03/18/23 06:31	1
Acenaphthene	ND		0.00020	0.00017	mg/L		03/17/23 14:39	03/18/23 06:31	1
Acenaphthylene	ND		0.00020	0.00013	mg/L		03/17/23 14:39	03/18/23 06:31	1
Acetophenone	ND		0.0010	0.00037	mg/L		03/17/23 14:39	03/18/23 06:31	1
Anthracene	ND		0.00020	0.00014	mg/L		03/17/23 14:39	03/18/23 06:31	1
Atrazine	ND		0.0020	0.00095	mg/L		03/17/23 14:39	03/18/23 06:31	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-565863/2-A
Matrix: Water
Analysis Batch: 565890

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565863

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	ND		0.0020	0.00076	mg/L		03/17/23 14:39	03/18/23 06:31	1
Benzo[a]anthracene	ND		0.00020	0.00017	mg/L		03/17/23 14:39	03/18/23 06:31	1
Benzo[a]pyrene	ND		0.00020	0.00017	mg/L		03/17/23 14:39	03/18/23 06:31	1
Benzo[b]fluoranthene	ND		0.00020	0.00015	mg/L		03/17/23 14:39	03/18/23 06:31	1
Benzo[g,h,i]perylene	ND		0.00020	0.00018	mg/L		03/17/23 14:39	03/18/23 06:31	1
Benzo[k]fluoranthene	ND		0.00020	0.00014	mg/L		03/17/23 14:39	03/18/23 06:31	1
Bis(2-chloroethoxy)methane	ND		0.0010	0.00046	mg/L		03/17/23 14:39	03/18/23 06:31	1
Bis(2-chloroethyl)ether	ND		0.0010	0.00040	mg/L		03/17/23 14:39	03/18/23 06:31	1
Bis(2-ethylhexyl) phthalate	ND		0.0050	0.0022	mg/L		03/17/23 14:39	03/18/23 06:31	1
Butyl benzyl phthalate	ND		0.0020	0.00067	mg/L		03/17/23 14:39	03/18/23 06:31	1
Caprolactam	ND		0.0050	0.00093	mg/L		03/17/23 14:39	03/18/23 06:31	1
Carbazole	ND		0.0010	0.00049	mg/L		03/17/23 14:39	03/18/23 06:31	1
Chrysene	ND		0.00020	0.00019	mg/L		03/17/23 14:39	03/18/23 06:31	1
Dibenz(a,h)anthracene	ND		0.00020	0.00015	mg/L		03/17/23 14:39	03/18/23 06:31	1
Dibenzofuran	ND		0.0010	0.00056	mg/L		03/17/23 14:39	03/18/23 06:31	1
Diethyl phthalate	ND		0.0050	0.0038	mg/L		03/17/23 14:39	03/18/23 06:31	1
Dimethyl phthalate	ND		0.0020	0.00052	mg/L		03/17/23 14:39	03/18/23 06:31	1
Di-n-butyl phthalate	ND		0.0050	0.0018	mg/L		03/17/23 14:39	03/18/23 06:31	1
Di-n-octyl phthalate	ND		0.0020	0.00082	mg/L		03/17/23 14:39	03/18/23 06:31	1
Fluoranthene	ND		0.00020	0.00016	mg/L		03/17/23 14:39	03/18/23 06:31	1
Fluorene	ND		0.00020	0.00017	mg/L		03/17/23 14:39	03/18/23 06:31	1
Hexachlorobenzene	ND		0.00020	0.00016	mg/L		03/17/23 14:39	03/18/23 06:31	1
Hexachlorobutadiene	ND		0.0010	0.00054	mg/L		03/17/23 14:39	03/18/23 06:31	1
Hexachlorocyclopentadiene	ND		0.010	0.0018	mg/L		03/17/23 14:39	03/18/23 06:31	1
Hexachloroethane	ND		0.0010	0.00040	mg/L		03/17/23 14:39	03/18/23 06:31	1
Indeno[1,2,3-cd]pyrene	ND		0.00020	0.00014	mg/L		03/17/23 14:39	03/18/23 06:31	1
Isophorone	ND		0.0010	0.00032	mg/L		03/17/23 14:39	03/18/23 06:31	1
N-Nitrosodi-n-propylamine	ND		0.0010	0.00025	mg/L		03/17/23 14:39	03/18/23 06:31	1
N-Nitrosodiphenylamine	ND		0.0010	0.00044	mg/L		03/17/23 14:39	03/18/23 06:31	1
Naphthalene	ND		0.00020	0.00011	mg/L		03/17/23 14:39	03/18/23 06:31	1
Nitrobenzene	ND		0.0010	0.00051	mg/L		03/17/23 14:39	03/18/23 06:31	1
Pentachlorophenol	ND		0.010	0.0031	mg/L		03/17/23 14:39	03/18/23 06:31	1
Phenanthrene	ND		0.00020	0.00017	mg/L		03/17/23 14:39	03/18/23 06:31	1
Phenol	ND		0.0010	0.00013	mg/L		03/17/23 14:39	03/18/23 06:31	1
Pyrene	ND		0.00020	0.00018	mg/L		03/17/23 14:39	03/18/23 06:31	1
3 & 4 Methylphenol	ND		0.0020	0.00019	mg/L		03/17/23 14:39	03/18/23 06:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	100		46 - 137	03/17/23 14:39	03/18/23 06:31	1
Phenol-d5 (Surr)	77		26 - 120	03/17/23 14:39	03/18/23 06:31	1
Nitrobenzene-d5 (Surr)	78		24 - 120	03/17/23 14:39	03/18/23 06:31	1
2-Fluorophenol (Surr)	87		19 - 120	03/17/23 14:39	03/18/23 06:31	1
2-Fluorobiphenyl (Surr)	83		33 - 120	03/17/23 14:39	03/18/23 06:31	1
2,4,6-Tribromophenol (Surr)	78		10 - 120	03/17/23 14:39	03/18/23 06:31	1

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565863/3-A
Matrix: Water
Analysis Batch: 565890

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565863

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.0320	0.0239		mg/L		75	48 - 120
bis (2-chloroisopropyl) ether	0.0320	0.0187		mg/L		58	41 - 120
2,4,5-Trichlorophenol	0.0320	0.0238		mg/L		74	52 - 123
2,4,6-Trichlorophenol	0.0320	0.0240		mg/L		75	51 - 120
2,4-Dichlorophenol	0.0320	0.0239		mg/L		75	53 - 120
2,4-Dimethylphenol	0.0320	0.0253		mg/L		79	44 - 120
2,4-Dinitrophenol	0.0640	0.0416		mg/L		65	11 - 139
2,4-Dinitrotoluene	0.0320	0.0270		mg/L		84	58 - 125
2,6-Dinitrotoluene	0.0320	0.0259		mg/L		81	54 - 132
2-Chloronaphthalene	0.0320	0.0240		mg/L		75	51 - 120
2-Chlorophenol	0.0320	0.0261		mg/L		82	46 - 120
2-Methylnaphthalene	0.0320	0.0235		mg/L		73	49 - 120
2-Methylphenol	0.0320	0.0250		mg/L		78	45 - 120
2-Nitroaniline	0.0320	0.0269		mg/L		84	57 - 121
2-Nitrophenol	0.0320	0.0248		mg/L		77	51 - 120
3,3'-Dichlorobenzidine	0.0640	0.0514		mg/L		80	51 - 154
3-Nitroaniline	0.0320	0.0267		mg/L		84	47 - 123
4,6-Dinitro-2-methylphenol	0.0640	0.0472		mg/L		74	49 - 130
4-Bromophenyl phenyl ether	0.0320	0.0235		mg/L		73	58 - 125
4-Chloro-3-methylphenol	0.0320	0.0238		mg/L		74	52 - 120
4-Chloroaniline	0.0320	0.00416		mg/L		13	10 - 126
4-Chlorophenyl phenyl ether	0.0320	0.0240		mg/L		75	55 - 120
4-Nitroaniline	0.0320	0.0361		mg/L		113	56 - 127
4-Nitrophenol	0.0640	0.0449		mg/L		70	10 - 120
Acenaphthene	0.0320	0.0236		mg/L		74	54 - 120
Acenaphthylene	0.0320	0.0242		mg/L		76	50 - 120
Acetophenone	0.0320	0.0215		mg/L		67	47 - 120
Anthracene	0.0320	0.0237		mg/L		74	58 - 121
Atrazine	0.0320	0.0271		mg/L		85	68 - 126
Benzaldehyde	0.0320	0.0288		mg/L		90	26 - 147
Benzo[a]anthracene	0.0320	0.0251		mg/L		79	61 - 120
Benzo[a]pyrene	0.0320	0.0243		mg/L		76	56 - 131
Benzo[b]fluoranthene	0.0320	0.0226		mg/L		71	57 - 130
Benzo[g,h,i]perylene	0.0320	0.0263		mg/L		82	58 - 120
Benzo[k]fluoranthene	0.0320	0.0232		mg/L		72	53 - 137
Bis(2-chloroethoxy)methane	0.0320	0.0225		mg/L		70	49 - 120
Bis(2-chloroethyl)ether	0.0320	0.0193		mg/L		60	40 - 120
Bis(2-ethylhexyl) phthalate	0.0320	0.0274		mg/L		86	60 - 126
Butyl benzyl phthalate	0.0320	0.0270		mg/L		84	58 - 124
Caprolactam	0.0320	0.0100		mg/L		31	10 - 120
Carbazole	0.0320	0.0254		mg/L		79	60 - 130
Chrysene	0.0320	0.0239		mg/L		75	57 - 120
Dibenz(a,h)anthracene	0.0320	0.0271		mg/L		85	58 - 120
Dibenzofuran	0.0320	0.0237		mg/L		74	54 - 120
Diethyl phthalate	0.0320	0.0252		mg/L		79	55 - 120
Dimethyl phthalate	0.0320	0.0250		mg/L		78	49 - 125
Di-n-butyl phthalate	0.0320	0.0249		mg/L		78	59 - 130
Di-n-octyl phthalate	0.0320	0.0212		mg/L		66	57 - 126

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-565863/3-A
Matrix: Water
Analysis Batch: 565890

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565863

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	0.0320	0.0249		mg/L		78	58 - 128
Fluorene	0.0320	0.0242		mg/L		76	55 - 120
Hexachlorobenzene	0.0320	0.0235		mg/L		73	55 - 120
Hexachlorobutadiene	0.0320	0.0215		mg/L		67	41 - 120
Hexachlorocyclopentadiene	0.0320	0.0204		mg/L		64	15 - 120
Hexachloroethane	0.0320	0.0202		mg/L		63	39 - 120
Indeno[1,2,3-cd]pyrene	0.0320	0.0259		mg/L		81	59 - 122
Isophorone	0.0320	0.0223		mg/L		70	51 - 120
N-Nitrosodi-n-propylamine	0.0320	0.0204		mg/L		64	49 - 120
N-Nitrosodiphenylamine	0.0320	0.0233		mg/L		73	56 - 125
Naphthalene	0.0320	0.0211		mg/L		66	46 - 120
Nitrobenzene	0.0320	0.0226		mg/L		71	47 - 120
Pentachlorophenol	0.0640	0.0443		mg/L		69	19 - 132
Phenanthrene	0.0320	0.0232		mg/L		73	55 - 120
Phenol	0.0320	0.0249		mg/L		78	10 - 120
Pyrene	0.0320	0.0262		mg/L		82	59 - 120
3 & 4 Methylphenol	0.0320	0.0245		mg/L		77	40 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	83		46 - 137
Phenol-d5 (Surr)	80		26 - 120
Nitrobenzene-d5 (Surr)	73		24 - 120
2-Fluorophenol (Surr)	116		19 - 120
2-Fluorobiphenyl (Surr)	77		33 - 120
2,4,6-Tribromophenol (Surr)	82		10 - 120

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-565980/1-A
Matrix: Water
Analysis Batch: 566001

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565980

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	102	J	500	68	ug/L		03/20/23 06:22	03/20/23 11:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	63		52 - 121	03/20/23 06:22	03/20/23 11:10	1

Lab Sample ID: LCS 240-565980/2-A
Matrix: Water
Analysis Batch: 566001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10 - C28]	2000	1420		ug/L		71	56 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	82		52 - 121

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-565788/1-A
Matrix: Water
Analysis Batch: 566106

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 565788

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	ND		200	1.3	ug/L		03/17/23 09:50	03/20/23 12:53	1
Cadmium	ND		5.0	0.20	ug/L		03/17/23 09:50	03/20/23 12:53	1
Chromium	ND		10	4.0	ug/L		03/17/23 09:50	03/20/23 12:53	1
Silver	1.52	J	10	0.62	ug/L		03/17/23 09:50	03/20/23 12:53	1
Arsenic	ND		15	4.1	ug/L		03/17/23 09:50	03/20/23 12:53	1
Lead	ND		10	2.8	ug/L		03/17/23 09:50	03/20/23 12:53	1
Selenium	ND		20	6.0	ug/L		03/17/23 09:50	03/20/23 12:53	1

Lab Sample ID: LCS 240-565788/2-A
Matrix: Water
Analysis Batch: 566106

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 565788

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	1000	990		ug/L		99	80 - 120
Chromium	1000	948		ug/L		95	80 - 120
Silver	100	98.9		ug/L		99	80 - 120
Arsenic	2000	2000		ug/L		100	80 - 120
Lead	1000	944		ug/L		94	80 - 120
Selenium	2000	2030		ug/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-565798/1-A
Matrix: Water
Analysis Batch: 566117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565798

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20	0.13	ug/L		03/17/23 11:00	03/20/23 15:13	1

Lab Sample ID: LCS 240-565798/2-A
Matrix: Water
Analysis Batch: 566117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Method: 2540D-2015 - Total Suspended Solids (Dried at 103-105°C)

Lab Sample ID: MB 240-566199/1
Matrix: Water
Analysis Batch: 566199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	ND		4.0	1.0	mg/L			03/21/23 10:23	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Method: 2540D-2015 - Total Suspended Solids (Dried at 103-105°C) (Continued)

Lab Sample ID: LCS 240-566199/2
 Matrix: Water
 Analysis Batch: 566199

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	77.7	73.5		mg/L		95	64 - 120

Lab Sample ID: 240-182044-1 DU
 Matrix: Water
 Analysis Batch: 566199

Client Sample ID: WC-257761-STORM SEWER
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	1200		1090		mg/L		6	10

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 240-565995/4
 Matrix: Water
 Analysis Batch: 565995

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.35	mg/L			03/17/23 17:33	1

Lab Sample ID: LCS 240-565995/5
 Matrix: Water
 Analysis Batch: 565995

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	17.7		mg/L		96	85 - 115
TOC Result 1	18.3	17.9		mg/L		98	85 - 115
TOC Result 2	18.3	17.4		mg/L		95	85 - 115

Method: 9040C - pH

Lab Sample ID: LCS 240-566058/38
 Matrix: Water
 Analysis Batch: 566058

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

Lab Sample ID: LCS 240-566058/80
 Matrix: Water
 Analysis Batch: 566058

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.20	9.3		SU		101	97 - 103

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

GC/MS VOA

Analysis Batch: 565809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	8260D	
MB 240-565809/9	Method Blank	Total/NA	Water	8260D	
LCS 240-565809/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-565809/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 565915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	8260D	
MB 240-565915/8	Method Blank	Total/NA	Water	8260D	
LCS 240-565915/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-565915/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 565863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	3510C LVI	
240-182044-1 - RA	WC-257761-STORM SEWER	Total/NA	Water	3510C LVI	
MB 240-565863/2-A	Method Blank	Total/NA	Water	3510C LVI	
LCS 240-565863/3-A	Lab Control Sample	Total/NA	Water	3510C LVI	

Analysis Batch: 565890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	8270E	565863
240-182044-1 - RA	WC-257761-STORM SEWER	Total/NA	Water	8270E	565863
MB 240-565863/2-A	Method Blank	Total/NA	Water	8270E	565863
LCS 240-565863/3-A	Lab Control Sample	Total/NA	Water	8270E	565863

GC Semi VOA

Prep Batch: 565980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	3511	
MB 240-565980/1-A	Method Blank	Total/NA	Water	3511	
LCS 240-565980/2-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 566001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	8015D	565980
MB 240-565980/1-A	Method Blank	Total/NA	Water	8015D	565980
LCS 240-565980/2-A	Lab Control Sample	Total/NA	Water	8015D	565980

Metals

Prep Batch: 565788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total Recoverable	Water	3005A	
MB 240-565788/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-565788/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182044-1

Metals

Prep Batch: 565798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	7470A	
MB 240-565798/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-565798/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 566106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total Recoverable	Water	6010D	565788
MB 240-565788/1-A	Method Blank	Total Recoverable	Water	6010D	565788
LCS 240-565788/2-A	Lab Control Sample	Total Recoverable	Water	6010D	565788

Analysis Batch: 566117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	7470A	565798
MB 240-565798/1-A	Method Blank	Total/NA	Water	7470A	565798
LCS 240-565798/2-A	Lab Control Sample	Total/NA	Water	7470A	565798

General Chemistry

Analysis Batch: 565995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	5310 C-2014	
MB 240-565995/4	Method Blank	Total/NA	Water	5310 C-2014	
LCS 240-565995/5	Lab Control Sample	Total/NA	Water	5310 C-2014	

Analysis Batch: 566058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	9040C	
LCS 240-566058/38	Lab Control Sample	Total/NA	Water	9040C	
LCS 240-566058/80	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 566199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182044-1	WC-257761-STORM SEWER	Total/NA	Water	2540D-2015	
MB 240-566199/1	Method Blank	Total/NA	Water	2540D-2015	
LCS 240-566199/2	Lab Control Sample	Total/NA	Water	2540D-2015	
240-182044-1 DU	WC-257761-STORM SEWER	Total/NA	Water	2540D-2015	

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Client Sample ID: WC-257761-STORM SEWER

Lab Sample ID: 240-182044-1

Date Collected: 03/16/23 16:00

Matrix: Water

Date Received: 03/16/23 19:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		33.333	565915	SAM	EET CAN	03/18/23 15:09
Total/NA	Analysis	8260D		1	565809	HMB	EET CAN	03/17/23 15:07
Total/NA	Prep	3510C LVI			565863	MDH	EET CAN	03/17/23 14:39
Total/NA	Analysis	8270E		50	565890	TMH	EET CAN	03/18/23 07:18
Total/NA	Prep	3510C LVI	RA		565863	MDH	EET CAN	03/17/23 14:39
Total/NA	Analysis	8270E	RA	333.333	565890	TMH	EET CAN	03/18/23 09:15
Total/NA	Prep	3511			565980	LKG	EET CAN	03/20/23 06:22
Total/NA	Analysis	8015D		20	566001	EPF	EET CAN	03/20/23 12:05
Total Recoverable	Prep	3005A			565788	MRL	EET CAN	03/17/23 09:50
Total Recoverable	Analysis	6010D		1	566106	RKT	EET CAN	03/20/23 13:02
Total/NA	Prep	7470A			565798	MRL	EET CAN	03/17/23 11:00
Total/NA	Analysis	7470A		1	566117	MRL	EET CAN	03/20/23 15:30
Total/NA	Analysis	2540D-2015		1	566199	GH	EET CAN	03/21/23 10:23
Total/NA	Analysis	5310 C-2014		50	565995	MED	EET CAN	03/17/23 18:36
Total/NA	Analysis	9040C		1	566058	JMB	EET CAN	03/17/23 17:16

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182044-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23 *
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

645687



Environment Testing
America

TAL-8210

Regulatory Program: DW NPDES RCRA Other:

Client Contact		Project Manager:		Site Contact:		Date:		COC No:		of		COCs	
Company Name:		Tel/Email:		Lab Contact:		Carrier:		Sampler:		For Lab Use Only:		Walk-in Client:	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		Job / SDG No.:		Lab Sampling:		Sample Specific Notes:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below:		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.	
Project Name:		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.	
Project #:		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.	



Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH; 6= Other

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Received by: *[Signature]* Date/Time: 3-16-23 1900
 Received in Laboratory by: _____ Date/Time: _____

Company: ELET NC
 Company: _____

Custody Seal No.: _____
 Company: _____

Cooler Temp. (°C): Obs'd: _____
 Company: _____



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 182044

Client Arcadis Site Name NSRR-ER
Cooler Received on 3-16-23 Opened on 3-16-23
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Cooler unpacked by:
[Signature]

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 3.1 °C Corrected Cooler Temp. 2.9 °C
IR GUN # IR-16 (CF -0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
IR GUN # IR-17 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
- 10. Were correct bottle(s) used for the test(s) indicated? Yes No
- 11. Sufficient quantity received to perform indicated analyses? Yes No
- 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
- 14. Were VOAs on the COC? Yes No
- 15. Were air bubbles >6 mm in any VOA vials? One 3-16-23 Yes No NA
 Larger than this. 3-16-23
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Norfolk Southern
Norfolk Southern Corporation
650 W Peachtree St NW
Atlanta, Georgia 30308

Generated 3/31/2023 1:51:06 PM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-182547-1

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
3/31/2023 1:51:06 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	6
Method Summary	7
Sample Summary	8
Detection Summary	9
Client Sample Results	11
Surrogate Summary	33
QC Sample Results	35
QC Association Summary	47
Lab Chronicle	51
Certification Summary	54
Chain of Custody	55

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Eurofins Canton

Definitions/Glossary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Case Narrative

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Job ID: 240-182547-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-182547-1

Receipt

The samples were received on 3/25/2023 6:35 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6°C and 2.8°C

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270E: The following samples were diluted to bring the concentration of target analytes within the calibration range: WC-251633-WATER (240-182547-1), WC-AL4771-WATER (240-182547-2), WC-251060-WATER (240-182547-3), WC-251688-WATER (240-182547-4) and WC-251478-WATER (240-182547-5). Elevated reporting limits (RLs) are provided.

Method 8270E: The laboratory control sample (LCS) for preparation batch 240-566966 and analytical batch 240-567104 recovered outside control limits for 4-Chloroaniline. This analyte has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified. The following samples were impacted: WC-251633-WATER (240-182547-1), WC-AL4771-WATER (240-182547-2), WC-251060-WATER (240-182547-3), WC-251688-WATER (240-182547-4) and WC-251478-WATER (240-182547-5).

Method 8270E: The continuing calibration verification (CCV) associated with batch 240-567104 recovered above the upper control limit for 2-Nitrophenol and 2,6-Dinitrotoluene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WC-251633-WATER (240-182547-1), WC-AL4771-WATER (240-182547-2), WC-251060-WATER (240-182547-3), WC-251688-WATER (240-182547-4) and WC-251478-WATER (240-182547-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics

Method 8015D_DRO: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-566977.

Method 8015D_DRO: The following sample was diluted due to the nature of the sample matrix: WC-251633-WATER (240-182547-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CAN
8015D	Diesel Range Organics (DRO) (GC)	SW846	EET CAN
6010D	Metals (ICP)	SW846	EET CAN
7470A	Mercury (CVAA)	SW846	EET CAN
1010B	Ignitability, Pinsky-Martens Closed-Cup Method	SW846	EET CAN
2540D-2015	Total Suspended Solids (Dried at 103-105°C)	SM	EET CAN
5310 C-2014	Total Organic Carbon/Persulfate - Ultrav	SM	EET CAN
9040C	pH	SW846	EET CAN
1311	TCLP Extraction	SW846	EET CAN
3010A	Preparation, Total Metals	SW846	EET CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAN
3511	Microextraction of Organic Compounds	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN
7470A	Preparation, Mercury	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-182547-1	WC-251633-WATER	Water	03/24/23 16:30	03/25/23 18:35
240-182547-2	WC-AL4771-WATER	Water	03/24/23 16:55	03/25/23 18:35
240-182547-3	WC-251060-WATER	Water	03/24/23 16:20	03/25/23 18:35
240-182547-4	WC-251688-WATER	Water	03/24/23 16:40	03/25/23 18:35
240-182547-5	WC-251478-WATER	Water	03/24/23 17:12	03/25/23 18:35
240-182547-6	TRIP BLANK	Water	03/24/23 00:00	03/25/23 18:35

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0023	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.032		0.010	0.0054	mg/L	1		8260D	Total/NA
Benzene	0.00058	J	0.0010	0.00042	mg/L	1		8260D	Total/NA
Vinyl chloride	0.034		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.00045	J	0.0020	0.00042	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	4900	B	980	130	ug/L	2		8015D	Total/NA
Barium	0.019	J	0.50	0.0013	mg/L	1		6010D	TCLP
Selenium	0.017	J B	0.050	0.0060	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	240		20	5.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	34		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.4	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0042	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.033		0.010	0.0054	mg/L	1		8260D	Total/NA
Ethylbenzene	0.0018		0.0010	0.00042	mg/L	1		8260D	Total/NA
Toluene	0.0025		0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0019		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.013		0.0020	0.00042	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	4200	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.025	J	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	260		21	5.1	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	180		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.5	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0024	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.028		0.010	0.0054	mg/L	1		8260D	Total/NA
Vinyl chloride	0.0089		0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.00050	J	0.0020	0.00042	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	3100	B	490	67	ug/L	1		8015D	Total/NA
Barium	0.026	J	0.50	0.0013	mg/L	1		6010D	TCLP
Cadmium	0.00024	J	0.050	0.00020	mg/L	1		6010D	TCLP
Selenium	0.0077	J B	0.050	0.0060	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	330		23	5.7	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	150		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.6	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0020	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.019		0.010	0.0054	mg/L	1		8260D	Total/NA
Cyclohexane	0.00077	J	0.0010	0.00048	mg/L	1		8260D	Total/NA
Ethylbenzene	0.0029		0.0010	0.00042	mg/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251688-WATER (Continued)

Lab Sample ID: 240-182547-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	0.0014		0.0010	0.00049	mg/L	1		8260D	Total/NA
Methylcyclohexane	0.0061		0.0010	0.00033	mg/L	1		8260D	Total/NA
Toluene	0.0054		0.0010	0.00044	mg/L	1		8260D	Total/NA
Vinyl chloride	0.00066	J	0.0010	0.00045	mg/L	1		8260D	Total/NA
Xylenes, Total	0.038		0.0020	0.00042	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	6700	B	490	66	ug/L	1		8015D	Total/NA
Barium	0.041	J	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	460		20	5.0	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	28		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.5	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	0.0020	J	0.010	0.0012	mg/L	1		8260D	Total/NA
Acetone	0.015		0.010	0.0054	mg/L	1		8260D	Total/NA
Vinyl chloride	0.012		0.0010	0.00045	mg/L	1		8260D	Total/NA
Diesel Range Organics [C10 - C28]	2100	B	490	66	ug/L	1		8015D	Total/NA
Barium	0.024	J	0.50	0.0013	mg/L	1		6010D	TCLP
Ignitability (Flashpoint)	>200				Degrees F	1		1010B	Total/NA
Total Suspended Solids	270		24	6.1	mg/L	1		2540D-2015	Total/NA
Total Organic Carbon	30		10	3.5	mg/L	10		5310 C-2014	Total/NA
corrosivity by pH	7.7	HF	0.1	0.1	SU	1		9040C	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182547-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Date Collected: 03/24/23 16:30

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 17:13	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 17:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 17:13	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 17:13	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 17:13	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 17:13	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 17:13	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 17:13	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 17:13	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 17:13	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 17:13	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 17:13	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 17:13	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 17:13	1
2-Butanone (MEK)	0.0023	J	0.010	0.0012	mg/L			03/28/23 17:13	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 17:13	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 17:13	1
Acetone	0.032		0.010	0.0054	mg/L			03/28/23 17:13	1
Benzene	0.00058	J	0.0010	0.00042	mg/L			03/28/23 17:13	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 17:13	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 17:13	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 17:13	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 17:13	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 17:13	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 17:13	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 17:13	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 17:13	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 17:13	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 17:13	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 17:13	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 17:13	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 17:13	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 17:13	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 17:13	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 17:13	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 17:13	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 17:13	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 17:13	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 17:13	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 17:13	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 17:13	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 17:13	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 17:13	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 17:13	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 17:13	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 17:13	1
Vinyl chloride	0.034		0.0010	0.00045	mg/L			03/28/23 17:13	1
Xylenes, Total	0.00045	J	0.0020	0.00042	mg/L			03/28/23 17:13	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Date Collected: 03/24/23 16:30

Matrix: Water

Date Received: 03/25/23 18:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		78 - 122		03/28/23 17:13	1
Dibromofluoromethane (Surr)	107		73 - 120		03/28/23 17:13	1
4-Bromofluorobenzene (Surr)	99		56 - 136		03/28/23 17:13	1
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		03/28/23 17:13	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.010	0.0049	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4,5-Trichlorophenol	ND		0.050	0.020	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4-Dichlorophenol	ND		0.020	0.0026	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4-Dimethylphenol	ND		0.020	0.0052	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4-Dinitrophenol	ND		0.10	0.062	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,4-Dinitrotoluene	ND		0.050	0.021	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Chloronaphthalene	ND		0.010	0.0048	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Chlorophenol	ND		0.010	0.0027	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Methylnaphthalene	ND		0.0020	0.0011	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Methylphenol	ND		0.010	0.0021	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Nitroaniline	ND		0.020	0.0051	mg/L		03/28/23 08:23	03/29/23 11:35	10
2-Nitrophenol	ND		0.020	0.0056	mg/L		03/28/23 08:23	03/29/23 11:35	10
3 & 4 Methylphenol	ND		0.020	0.0019	mg/L		03/28/23 08:23	03/29/23 11:35	10
3,3'-Dichlorobenzidine	ND		0.050	0.012	mg/L		03/28/23 08:23	03/29/23 11:35	10
3-Nitroaniline	ND		0.020	0.0057	mg/L		03/28/23 08:23	03/29/23 11:35	10
4,6-Dinitro-2-methylphenol	ND		0.050	0.028	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Bromophenyl phenyl ether	ND		0.020	0.0050	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Chloro-3-methylphenol	ND		0.020	0.0030	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Chloroaniline	ND	*	0.020	0.0032	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Chlorophenyl phenyl ether	ND		0.020	0.0055	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Nitroaniline	ND		0.020	0.0092	mg/L		03/28/23 08:23	03/29/23 11:35	10
Acenaphthene	ND		0.0020	0.0017	mg/L		03/28/23 08:23	03/29/23 11:35	10
Acenaphthylene	ND		0.0020	0.0013	mg/L		03/28/23 08:23	03/29/23 11:35	10
Acetophenone	ND		0.010	0.0037	mg/L		03/28/23 08:23	03/29/23 11:35	10
Anthracene	ND		0.0020	0.0014	mg/L		03/28/23 08:23	03/29/23 11:35	10
Atrazine	ND		0.020	0.0095	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzaldehyde	ND		0.020	0.0076	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzo[a]anthracene	ND		0.0020	0.0017	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzo[a]pyrene	ND		0.0020	0.0017	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzo[b]fluoranthene	ND		0.0020	0.0015	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzo[g,h,i]perylene	ND		0.0020	0.0018	mg/L		03/28/23 08:23	03/29/23 11:35	10
Benzo[k]fluoranthene	ND		0.0020	0.0014	mg/L		03/28/23 08:23	03/29/23 11:35	10
Bis(2-chloroethoxy)methane	ND		0.010	0.0046	mg/L		03/28/23 08:23	03/29/23 11:35	10
Bis(2-chloroethyl)ether	ND		0.010	0.0040	mg/L		03/28/23 08:23	03/29/23 11:35	10
Bis(2-ethylhexyl) phthalate	ND		0.050	0.022	mg/L		03/28/23 08:23	03/29/23 11:35	10
Butyl benzyl phthalate	ND		0.020	0.0067	mg/L		03/28/23 08:23	03/29/23 11:35	10
Caprolactam	ND		0.050	0.0093	mg/L		03/28/23 08:23	03/29/23 11:35	10
Carbazole	ND		0.010	0.0049	mg/L		03/28/23 08:23	03/29/23 11:35	10
Chrysene	ND		0.0020	0.0019	mg/L		03/28/23 08:23	03/29/23 11:35	10
Di-n-butyl phthalate	ND		0.050	0.018	mg/L		03/28/23 08:23	03/29/23 11:35	10
Di-n-octyl phthalate	ND		0.020	0.0082	mg/L		03/28/23 08:23	03/29/23 11:35	10
Dibenz(a,h)anthracene	ND		0.0020	0.0015	mg/L		03/28/23 08:23	03/29/23 11:35	10

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Date Collected: 03/24/23 16:30

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	ND		0.010	0.0056	mg/L		03/28/23 08:23	03/29/23 11:35	10
Diethyl phthalate	ND		0.050	0.038	mg/L		03/28/23 08:23	03/29/23 11:35	10
Dimethyl phthalate	ND		0.020	0.0052	mg/L		03/28/23 08:23	03/29/23 11:35	10
Fluoranthene	ND		0.0020	0.0016	mg/L		03/28/23 08:23	03/29/23 11:35	10
Fluorene	ND		0.0020	0.0017	mg/L		03/28/23 08:23	03/29/23 11:35	10
Hexachlorobenzene	ND		0.0020	0.0016	mg/L		03/28/23 08:23	03/29/23 11:35	10
Hexachlorobutadiene	ND		0.010	0.0054	mg/L		03/28/23 08:23	03/29/23 11:35	10
Hexachlorocyclopentadiene	ND		0.10	0.018	mg/L		03/28/23 08:23	03/29/23 11:35	10
Hexachloroethane	ND		0.010	0.0040	mg/L		03/28/23 08:23	03/29/23 11:35	10
Indeno[1,2,3-cd]pyrene	ND		0.0020	0.0014	mg/L		03/28/23 08:23	03/29/23 11:35	10
Isophorone	ND		0.010	0.0032	mg/L		03/28/23 08:23	03/29/23 11:35	10
N-Nitrosodi-n-propylamine	ND		0.010	0.0025	mg/L		03/28/23 08:23	03/29/23 11:35	10
N-Nitrosodiphenylamine	ND		0.010	0.0044	mg/L		03/28/23 08:23	03/29/23 11:35	10
Naphthalene	ND		0.0020	0.0011	mg/L		03/28/23 08:23	03/29/23 11:35	10
Nitrobenzene	ND		0.010	0.0051	mg/L		03/28/23 08:23	03/29/23 11:35	10
Pentachlorophenol	ND		0.10	0.031	mg/L		03/28/23 08:23	03/29/23 11:35	10
Phenanthrene	ND		0.0020	0.0017	mg/L		03/28/23 08:23	03/29/23 11:35	10
Phenol	ND		0.010	0.0013	mg/L		03/28/23 08:23	03/29/23 11:35	10
Pyrene	ND		0.0020	0.0018	mg/L		03/28/23 08:23	03/29/23 11:35	10
bis (2-chloroisopropyl) ether	ND		0.010	0.0055	mg/L		03/28/23 08:23	03/29/23 11:35	10
2,6-Dinitrotoluene	ND		0.050	0.021	mg/L		03/28/23 08:23	03/29/23 11:35	10
4-Nitrophenol	ND		0.10	0.022	mg/L		03/28/23 08:23	03/29/23 11:35	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	30	S1-	46 - 137	03/28/23 08:23	03/29/23 11:35	10
Phenol-d5 (Surr)	15	S1-	26 - 120	03/28/23 08:23	03/29/23 11:35	10
Nitrobenzene-d5 (Surr)	46		24 - 120	03/28/23 08:23	03/29/23 11:35	10
2-Fluorophenol (Surr)	24		19 - 120	03/28/23 08:23	03/29/23 11:35	10
2-Fluorobiphenyl (Surr)	60		33 - 120	03/28/23 08:23	03/29/23 11:35	10
2,4,6-Tribromophenol (Surr)	54		10 - 120	03/28/23 08:23	03/29/23 11:35	10

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	4900	B	980	130	ug/L		03/28/23 08:59	03/28/23 12:54	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	53		52 - 121	03/28/23 08:59	03/28/23 12:54	2

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 16:25	1
Barium	0.019	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 16:25	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 16:25	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 16:25	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 16:25	1
Selenium	0.017	J B	0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 16:25	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 16:25	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:29	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Date Collected: 03/24/23 16:30

Matrix: Water

Date Received: 03/25/23 18:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/27/23 15:34	1
Total Suspended Solids (SM 2540D-2015)	240		20	5.0	mg/L			03/27/23 14:06	1
Total Organic Carbon (SM 5310 C-2014)	34		10	3.5	mg/L			03/29/23 11:59	10
corrosivity by pH (SW846 9040C)	7.4	HF	0.1	0.1	SU			03/29/23 13:32	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Date Collected: 03/24/23 16:55

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 17:37	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 17:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 17:37	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 17:37	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 17:37	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 17:37	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 17:37	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 17:37	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 17:37	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 17:37	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 17:37	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 17:37	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 17:37	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 17:37	1
2-Butanone (MEK)	0.0042	J	0.010	0.0012	mg/L			03/28/23 17:37	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 17:37	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 17:37	1
Acetone	0.033		0.010	0.0054	mg/L			03/28/23 17:37	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 17:37	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 17:37	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 17:37	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 17:37	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 17:37	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 17:37	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 17:37	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 17:37	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 17:37	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 17:37	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 17:37	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 17:37	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 17:37	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 17:37	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 17:37	1
Ethylbenzene	0.0018		0.0010	0.00042	mg/L			03/28/23 17:37	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 17:37	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 17:37	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 17:37	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 17:37	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 17:37	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 17:37	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 17:37	1
Toluene	0.0025		0.0010	0.00044	mg/L			03/28/23 17:37	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 17:37	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 17:37	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 17:37	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 17:37	1
Vinyl chloride	0.0019		0.0010	0.00045	mg/L			03/28/23 17:37	1
Xylenes, Total	0.013		0.0020	0.00042	mg/L			03/28/23 17:37	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Date Collected: 03/24/23 16:55

Matrix: Water

Date Received: 03/25/23 18:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		78 - 122		03/28/23 17:37	1
Toluene-d8 (Surr)	105		78 - 122		03/29/23 12:49	4
Dibromofluoromethane (Surr)	105		73 - 120		03/28/23 17:37	1
Dibromofluoromethane (Surr)	112		73 - 120		03/29/23 12:49	4
4-Bromofluorobenzene (Surr)	110		56 - 136		03/28/23 17:37	1
4-Bromofluorobenzene (Surr)	112		56 - 136		03/29/23 12:49	4
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		03/28/23 17:37	1
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		03/29/23 12:49	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		2.5	1.2	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4,6-Trichlorophenol	ND		13	4.5	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4,5-Trichlorophenol	ND		13	5.0	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4-Dichlorophenol	ND		5.0	0.66	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4-Dimethylphenol	ND		5.0	1.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4-Dinitrophenol	ND		25	16	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,4-Dinitrotoluene	ND		13	5.2	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Chloronaphthalene	ND		2.5	1.2	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Chlorophenol	ND		2.5	0.68	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Methylnaphthalene	ND		0.50	0.28	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Methylphenol	ND		2.5	0.52	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Nitroaniline	ND		5.0	1.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2-Nitrophenol	ND		5.0	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
3 & 4 Methylphenol	ND		5.0	0.48	mg/L		03/28/23 08:23	03/29/23 13:01	2500
3,3'-Dichlorobenzidine	ND		13	2.9	mg/L		03/28/23 08:23	03/29/23 13:01	2500
3-Nitroaniline	ND		5.0	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4,6-Dinitro-2-methylphenol	ND		13	7.1	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Bromophenyl phenyl ether	ND		5.0	1.2	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Chloro-3-methylphenol	ND		5.0	0.74	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Chloroaniline	ND	*	5.0	0.79	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Chlorophenyl phenyl ether	ND		5.0	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Nitroaniline	ND		5.0	2.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Acenaphthene	ND		0.50	0.43	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Acenaphthylene	ND		0.50	0.31	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Acetophenone	ND		2.5	0.92	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Anthracene	ND		0.50	0.34	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Atrazine	ND		5.0	2.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzaldehyde	ND		5.0	1.9	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzo[a]anthracene	ND		0.50	0.43	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzo[a]pyrene	ND		0.50	0.43	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzo[b]fluoranthene	ND		0.50	0.39	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzo[g,h,i]perylene	ND		0.50	0.45	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Benzo[k]fluoranthene	ND		0.50	0.35	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Bis(2-chloroethoxy)methane	ND		2.5	1.1	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Bis(2-chloroethyl)ether	ND		2.5	1.0	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Bis(2-ethylhexyl) phthalate	ND		13	5.6	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Butyl benzyl phthalate	ND		5.0	1.7	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Caprolactam	ND		13	2.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Carbazole	ND		2.5	1.2	mg/L		03/28/23 08:23	03/29/23 13:01	2500

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Date Collected: 03/24/23 16:55

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.50	0.47	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Di-n-butyl phthalate	ND		13	4.5	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Di-n-octyl phthalate	ND		5.0	2.1	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Dibenz(a,h)anthracene	ND		0.50	0.38	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Dibenzofuran	ND		2.5	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Diethyl phthalate	ND		13	9.5	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Dimethyl phthalate	ND		5.0	1.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Fluoranthene	ND		0.50	0.40	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Fluorene	ND		0.50	0.42	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Hexachlorobenzene	ND		0.50	0.40	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Hexachlorobutadiene	ND		2.5	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Hexachlorocyclopentadiene	ND		25	4.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Hexachloroethane	ND		2.5	0.99	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Indeno[1,2,3-cd]pyrene	ND		0.50	0.34	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Isophorone	ND		2.5	0.81	mg/L		03/28/23 08:23	03/29/23 13:01	2500
N-Nitrosodi-n-propylamine	ND		2.5	0.63	mg/L		03/28/23 08:23	03/29/23 13:01	2500
N-Nitrosodiphenylamine	ND		2.5	1.1	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Naphthalene	ND		0.50	0.27	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Nitrobenzene	ND		2.5	1.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Pentachlorophenol	ND		25	7.8	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Phenanthrene	ND		0.50	0.42	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Phenol	ND		2.5	0.32	mg/L		03/28/23 08:23	03/29/23 13:01	2500
Pyrene	ND		0.50	0.44	mg/L		03/28/23 08:23	03/29/23 13:01	2500
bis (2-chloroisopropyl) ether	ND		2.5	1.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500
2,6-Dinitrotoluene	ND		13	5.3	mg/L		03/28/23 08:23	03/29/23 13:01	2500
4-Nitrophenol	ND		25	5.4	mg/L		03/28/23 08:23	03/29/23 13:01	2500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/28/23 08:23	03/29/23 13:01	2500
Phenol-d5 (Surr)	0	S1-	26 - 120	03/28/23 08:23	03/29/23 13:01	2500
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/28/23 08:23	03/29/23 13:01	2500
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/28/23 08:23	03/29/23 13:01	2500
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/28/23 08:23	03/29/23 13:01	2500
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/28/23 08:23	03/29/23 13:01	2500

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	4200	B	490	67	ug/L		03/28/23 08:59	03/28/23 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	59		52 - 121	03/28/23 08:59	03/28/23 13:22	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 16:30	1
Barium	0.025	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 16:30	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 16:30	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 16:30	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 16:30	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 16:30	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Date Collected: 03/24/23 16:55

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 16:30	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/27/23 15:55	1
Total Suspended Solids (SM 2540D-2015)	260		21	5.1	mg/L			03/27/23 14:06	1
Total Organic Carbon (SM 5310 C-2014)	180		10	3.5	mg/L			03/29/23 12:37	10
corrosivity by pH (SW846 9040C)	7.5	HF	0.1	0.1	SU			03/29/23 13:32	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:01	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 18:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 18:01	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:01	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 18:01	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 18:01	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 18:01	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 18:01	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 18:01	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 18:01	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 18:01	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 18:01	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 18:01	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 18:01	1
2-Butanone (MEK)	0.0024	J	0.010	0.0012	mg/L			03/28/23 18:01	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 18:01	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 18:01	1
Acetone	0.028		0.010	0.0054	mg/L			03/28/23 18:01	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 18:01	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 18:01	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 18:01	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 18:01	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 18:01	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 18:01	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 18:01	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 18:01	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 18:01	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 18:01	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 18:01	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 18:01	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 18:01	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 18:01	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 18:01	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 18:01	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 18:01	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 18:01	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 18:01	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 18:01	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 18:01	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 18:01	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:01	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 18:01	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 18:01	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 18:01	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:01	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 18:01	1
Vinyl chloride	0.0089		0.0010	0.00045	mg/L			03/28/23 18:01	1
Xylenes, Total	0.00050	J	0.0020	0.00042	mg/L			03/28/23 18:01	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		78 - 122		03/28/23 18:01	1
Toluene-d8 (Surr)	101		78 - 122		03/29/23 13:13	4
Dibromofluoromethane (Surr)	104		73 - 120		03/28/23 18:01	1
Dibromofluoromethane (Surr)	110		73 - 120		03/29/23 13:13	4
4-Bromofluorobenzene (Surr)	106		56 - 136		03/28/23 18:01	1
4-Bromofluorobenzene (Surr)	107		56 - 136		03/29/23 13:13	4
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		03/28/23 18:01	1
1,2-Dichloroethane-d4 (Surr)	102		62 - 137		03/29/23 13:13	4

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		1.2	0.61	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4,6-Trichlorophenol	ND		6.2	2.2	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4,5-Trichlorophenol	ND		6.2	2.5	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4-Dichlorophenol	ND		2.5	0.32	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4-Dimethylphenol	ND		2.5	0.64	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4-Dinitrophenol	ND		12	7.7	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,4-Dinitrotoluene	ND		6.2	2.6	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Chloronaphthalene	ND		1.2	0.60	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Chlorophenol	ND		1.2	0.34	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Methylnaphthalene	ND		0.25	0.14	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Methylphenol	ND		1.2	0.26	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Nitroaniline	ND		2.5	0.63	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2-Nitrophenol	ND		2.5	0.70	mg/L		03/28/23 08:23	03/29/23 13:24	1250
3 & 4 Methylphenol	ND		2.5	0.24	mg/L		03/28/23 08:23	03/29/23 13:24	1250
3,3'-Dichlorobenzidine	ND		6.2	1.4	mg/L		03/28/23 08:23	03/29/23 13:24	1250
3-Nitroaniline	ND		2.5	0.70	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4,6-Dinitro-2-methylphenol	ND		6.2	3.5	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Bromophenyl phenyl ether	ND		2.5	0.62	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Chloro-3-methylphenol	ND		2.5	0.37	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Chloroaniline	ND	*	2.5	0.39	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Chlorophenyl phenyl ether	ND		2.5	0.68	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Nitroaniline	ND		2.5	1.1	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Acenaphthene	ND		0.25	0.21	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Acenaphthylene	ND		0.25	0.15	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Acetophenone	ND		1.2	0.45	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Anthracene	ND		0.25	0.17	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Atrazine	ND		2.5	1.2	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzaldehyde	ND		2.5	0.94	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzo[a]anthracene	ND		0.25	0.21	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzo[a]pyrene	ND		0.25	0.21	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzo[b]fluoranthene	ND		0.25	0.19	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzo[g,h,i]perylene	ND		0.25	0.22	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Benzo[k]fluoranthene	ND		0.25	0.17	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Bis(2-chloroethoxy)methane	ND		1.2	0.56	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Bis(2-chloroethyl)ether	ND		1.2	0.50	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Bis(2-ethylhexyl) phthalate	ND		6.2	2.8	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Butyl benzyl phthalate	ND		2.5	0.82	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Caprolactam	ND		6.2	1.2	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Carbazole	ND		1.2	0.61	mg/L		03/28/23 08:23	03/29/23 13:24	1250

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.25	0.23	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Di-n-butyl phthalate	ND		6.2	2.2	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Di-n-octyl phthalate	ND		2.5	1.0	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Dibenz(a,h)anthracene	ND		0.25	0.19	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Dibenzofuran	ND		1.2	0.69	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Diethyl phthalate	ND		6.2	4.7	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Dimethyl phthalate	ND		2.5	0.64	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Fluoranthene	ND		0.25	0.20	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Fluorene	ND		0.25	0.21	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Hexachlorobenzene	ND		0.25	0.20	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Hexachlorobutadiene	ND		1.2	0.67	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Hexachlorocyclopentadiene	ND		12	2.2	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Hexachloroethane	ND		1.2	0.49	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Indeno[1,2,3-cd]pyrene	ND		0.25	0.17	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Isophorone	ND		1.2	0.40	mg/L		03/28/23 08:23	03/29/23 13:24	1250
N-Nitrosodi-n-propylamine	ND		1.2	0.31	mg/L		03/28/23 08:23	03/29/23 13:24	1250
N-Nitrosodiphenylamine	ND		1.2	0.54	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Naphthalene	ND		0.25	0.13	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Nitrobenzene	ND		1.2	0.64	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Pentachlorophenol	ND		12	3.8	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Phenanthrene	ND		0.25	0.21	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Phenol	ND		1.2	0.16	mg/L		03/28/23 08:23	03/29/23 13:24	1250
Pyrene	ND		0.25	0.22	mg/L		03/28/23 08:23	03/29/23 13:24	1250
bis (2-chloroisopropyl) ether	ND		1.2	0.68	mg/L		03/28/23 08:23	03/29/23 13:24	1250
2,6-Dinitrotoluene	ND		6.2	2.6	mg/L		03/28/23 08:23	03/29/23 13:24	1250
4-Nitrophenol	ND		12	2.7	mg/L		03/28/23 08:23	03/29/23 13:24	1250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	0	S1-	46 - 137	03/28/23 08:23	03/29/23 13:24	1250
Phenol-d5 (Surr)	0	S1-	26 - 120	03/28/23 08:23	03/29/23 13:24	1250
Nitrobenzene-d5 (Surr)	0	S1-	24 - 120	03/28/23 08:23	03/29/23 13:24	1250
2-Fluorophenol (Surr)	0	S1-	19 - 120	03/28/23 08:23	03/29/23 13:24	1250
2-Fluorobiphenyl (Surr)	0	S1-	33 - 120	03/28/23 08:23	03/29/23 13:24	1250
2,4,6-Tribromophenol (Surr)	0	S1-	10 - 120	03/28/23 08:23	03/29/23 13:24	1250

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	3100	B	490	67	ug/L		03/28/23 08:59	03/28/23 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	59		52 - 121	03/28/23 08:59	03/28/23 13:50	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 16:34	1
Barium	0.026	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 16:34	1
Cadmium	0.00024	J	0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 16:34	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 16:34	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 16:34	1
Selenium	0.0077	J B	0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 16:34	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 16:34	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/28/23 17:25	1
Total Suspended Solids (SM 2540D-2015)	330		23	5.7	mg/L			03/27/23 14:06	1
Total Organic Carbon (SM 5310 C-2014)	150		10	3.5	mg/L			03/29/23 12:49	10
corrosivity by pH (SW846 9040C)	7.6	HF	0.1	0.1	SU			03/29/23 13:32	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Date Collected: 03/24/23 16:40

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:24	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 18:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 18:24	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:24	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 18:24	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 18:24	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 18:24	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 18:24	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 18:24	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 18:24	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 18:24	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 18:24	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 18:24	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 18:24	1
2-Butanone (MEK)	0.0020	J	0.010	0.0012	mg/L			03/28/23 18:24	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 18:24	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 18:24	1
Acetone	0.019		0.010	0.0054	mg/L			03/28/23 18:24	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 18:24	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 18:24	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 18:24	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 18:24	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 18:24	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 18:24	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 18:24	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 18:24	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 18:24	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 18:24	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 18:24	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 18:24	1
Cyclohexane	0.00077	J	0.0010	0.00048	mg/L			03/28/23 18:24	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 18:24	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 18:24	1
Ethylbenzene	0.0029		0.0010	0.00042	mg/L			03/28/23 18:24	1
Isopropylbenzene	0.0014		0.0010	0.00049	mg/L			03/28/23 18:24	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 18:24	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 18:24	1
Methylcyclohexane	0.0061		0.0010	0.00033	mg/L			03/28/23 18:24	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 18:24	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 18:24	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:24	1
Toluene	0.0054		0.0010	0.00044	mg/L			03/28/23 18:24	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 18:24	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 18:24	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:24	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 18:24	1
Vinyl chloride	0.00066	J	0.0010	0.00045	mg/L			03/28/23 18:24	1
Xylenes, Total	0.038		0.0020	0.00042	mg/L			03/28/23 18:24	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Date Collected: 03/24/23 16:40

Matrix: Water

Date Received: 03/25/23 18:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		78 - 122		03/28/23 18:24	1
Toluene-d8 (Surr)	100		78 - 122		03/29/23 14:02	40
Dibromofluoromethane (Surr)	104		73 - 120		03/28/23 18:24	1
Dibromofluoromethane (Surr)	111		73 - 120		03/29/23 14:02	40
4-Bromofluorobenzene (Surr)	101		56 - 136		03/28/23 18:24	1
4-Bromofluorobenzene (Surr)	98		56 - 136		03/29/23 14:02	40
1,2-Dichloroethane-d4 (Surr)	97		62 - 137		03/28/23 18:24	1
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/29/23 14:02	40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.020	0.0098	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4,6-Trichlorophenol	ND		0.10	0.036	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4,5-Trichlorophenol	ND		0.10	0.040	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4-Dichlorophenol	ND		0.040	0.0052	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4-Dimethylphenol	ND		0.040	0.010	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4-Dinitrophenol	ND		0.20	0.12	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,4-Dinitrotoluene	ND		0.10	0.041	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Chloronaphthalene	ND		0.020	0.0097	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Chlorophenol	ND		0.020	0.0055	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Methylnaphthalene	ND		0.0040	0.0022	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Methylphenol	ND		0.020	0.0042	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Nitroaniline	ND		0.040	0.010	mg/L		03/28/23 08:23	03/29/23 11:58	20
2-Nitrophenol	ND		0.040	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
3 & 4 Methylphenol	ND		0.040	0.0038	mg/L		03/28/23 08:23	03/29/23 11:58	20
3,3'-Dichlorobenzidine	ND		0.10	0.023	mg/L		03/28/23 08:23	03/29/23 11:58	20
3-Nitroaniline	ND		0.040	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
4,6-Dinitro-2-methylphenol	ND		0.10	0.056	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Bromophenyl phenyl ether	ND		0.040	0.010	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Chloro-3-methylphenol	ND		0.040	0.0059	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Chloroaniline	ND	*	0.040	0.0063	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Chlorophenyl phenyl ether	ND		0.040	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Nitroaniline	ND		0.040	0.018	mg/L		03/28/23 08:23	03/29/23 11:58	20
Acenaphthene	ND		0.0040	0.0034	mg/L		03/28/23 08:23	03/29/23 11:58	20
Acenaphthylene	ND		0.0040	0.0025	mg/L		03/28/23 08:23	03/29/23 11:58	20
Acetophenone	ND		0.020	0.0073	mg/L		03/28/23 08:23	03/29/23 11:58	20
Anthracene	ND		0.0040	0.0027	mg/L		03/28/23 08:23	03/29/23 11:58	20
Atrazine	ND		0.040	0.019	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzaldehyde	ND		0.040	0.015	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzo[a]anthracene	ND		0.0040	0.0034	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzo[a]pyrene	ND		0.0040	0.0035	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzo[b]fluoranthene	ND		0.0040	0.0031	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzo[g,h,i]perylene	ND		0.0040	0.0036	mg/L		03/28/23 08:23	03/29/23 11:58	20
Benzo[k]fluoranthene	ND		0.0040	0.0028	mg/L		03/28/23 08:23	03/29/23 11:58	20
Bis(2-chloroethoxy)methane	ND		0.020	0.0091	mg/L		03/28/23 08:23	03/29/23 11:58	20
Bis(2-chloroethyl)ether	ND		0.020	0.0080	mg/L		03/28/23 08:23	03/29/23 11:58	20
Bis(2-ethylhexyl) phthalate	ND		0.10	0.044	mg/L		03/28/23 08:23	03/29/23 11:58	20
Butyl benzyl phthalate	ND		0.040	0.013	mg/L		03/28/23 08:23	03/29/23 11:58	20
Caprolactam	ND		0.10	0.019	mg/L		03/28/23 08:23	03/29/23 11:58	20
Carbazole	ND		0.020	0.0098	mg/L		03/28/23 08:23	03/29/23 11:58	20

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Date Collected: 03/24/23 16:40

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.0040	0.0037	mg/L		03/28/23 08:23	03/29/23 11:58	20
Di-n-butyl phthalate	ND		0.10	0.036	mg/L		03/28/23 08:23	03/29/23 11:58	20
Di-n-octyl phthalate	ND		0.040	0.016	mg/L		03/28/23 08:23	03/29/23 11:58	20
Dibenz(a,h)anthracene	ND		0.0040	0.0030	mg/L		03/28/23 08:23	03/29/23 11:58	20
Dibenzofuran	ND		0.020	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
Diethyl phthalate	ND		0.10	0.076	mg/L		03/28/23 08:23	03/29/23 11:58	20
Dimethyl phthalate	ND		0.040	0.010	mg/L		03/28/23 08:23	03/29/23 11:58	20
Fluoranthene	ND		0.0040	0.0032	mg/L		03/28/23 08:23	03/29/23 11:58	20
Fluorene	ND		0.0040	0.0034	mg/L		03/28/23 08:23	03/29/23 11:58	20
Hexachlorobenzene	ND		0.0040	0.0032	mg/L		03/28/23 08:23	03/29/23 11:58	20
Hexachlorobutadiene	ND		0.020	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
Hexachlorocyclopentadiene	ND		0.20	0.035	mg/L		03/28/23 08:23	03/29/23 11:58	20
Hexachloroethane	ND		0.020	0.0079	mg/L		03/28/23 08:23	03/29/23 11:58	20
Indeno[1,2,3-cd]pyrene	ND		0.0040	0.0027	mg/L		03/28/23 08:23	03/29/23 11:58	20
Isophorone	ND		0.020	0.0065	mg/L		03/28/23 08:23	03/29/23 11:58	20
N-Nitrosodi-n-propylamine	ND		0.020	0.0051	mg/L		03/28/23 08:23	03/29/23 11:58	20
N-Nitrosodiphenylamine	ND		0.020	0.0088	mg/L		03/28/23 08:23	03/29/23 11:58	20
Naphthalene	ND		0.0040	0.0022	mg/L		03/28/23 08:23	03/29/23 11:58	20
Nitrobenzene	ND		0.020	0.010	mg/L		03/28/23 08:23	03/29/23 11:58	20
Pentachlorophenol	ND		0.20	0.062	mg/L		03/28/23 08:23	03/29/23 11:58	20
Phenanthrene	ND		0.0040	0.0033	mg/L		03/28/23 08:23	03/29/23 11:58	20
Phenol	ND		0.020	0.0026	mg/L		03/28/23 08:23	03/29/23 11:58	20
Pyrene	ND		0.0040	0.0035	mg/L		03/28/23 08:23	03/29/23 11:58	20
bis (2-chloroisopropyl) ether	ND		0.020	0.011	mg/L		03/28/23 08:23	03/29/23 11:58	20
2,6-Dinitrotoluene	ND		0.10	0.043	mg/L		03/28/23 08:23	03/29/23 11:58	20
4-Nitrophenol	ND		0.20	0.043	mg/L		03/28/23 08:23	03/29/23 11:58	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	111		46 - 137	03/28/23 08:23	03/29/23 11:58	20
Phenol-d5 (Surr)	24	S1-	26 - 120	03/28/23 08:23	03/29/23 11:58	20
Nitrobenzene-d5 (Surr)	80		24 - 120	03/28/23 08:23	03/29/23 11:58	20
2-Fluorophenol (Surr)	36		19 - 120	03/28/23 08:23	03/29/23 11:58	20
2-Fluorobiphenyl (Surr)	111		33 - 120	03/28/23 08:23	03/29/23 11:58	20
2,4,6-Tribromophenol (Surr)	97		10 - 120	03/28/23 08:23	03/29/23 11:58	20

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	6700	B	490	66	ug/L		03/28/23 08:59	03/28/23 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	76		52 - 121	03/28/23 08:59	03/28/23 14:18	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 16:38	1
Barium	0.041	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 16:38	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 16:38	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 16:38	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 16:38	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 16:38	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Date Collected: 03/24/23 16:40

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 16:38	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/28/23 18:20	1
Total Suspended Solids (SM 2540D-2015)	460		20	5.0	mg/L			03/27/23 14:06	1
Total Organic Carbon (SM 5310 C-2014)	28		10	3.5	mg/L			03/29/23 13:01	10
corrosivity by pH (SW846 9040C)	7.5	HF	0.1	0.1	SU			03/29/23 13:32	1

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:48	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 18:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 18:48	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 18:48	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 18:48	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 18:48	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 18:48	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 18:48	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 18:48	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 18:48	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 18:48	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 18:48	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 18:48	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 18:48	1
2-Butanone (MEK)	0.0020	J	0.010	0.0012	mg/L			03/28/23 18:48	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 18:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 18:48	1
Acetone	0.015		0.010	0.0054	mg/L			03/28/23 18:48	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 18:48	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 18:48	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 18:48	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 18:48	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 18:48	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 18:48	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 18:48	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 18:48	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 18:48	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 18:48	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 18:48	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 18:48	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 18:48	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 18:48	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 18:48	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 18:48	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 18:48	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 18:48	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 18:48	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 18:48	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 18:48	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 18:48	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:48	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 18:48	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 18:48	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 18:48	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 18:48	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 18:48	1
Vinyl chloride	0.012		0.0010	0.00045	mg/L			03/28/23 18:48	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/28/23 18:48	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		78 - 122		03/28/23 18:48	1
Toluene-d8 (Surr)	103		78 - 122		03/29/23 13:37	10
Dibromofluoromethane (Surr)	101		73 - 120		03/28/23 18:48	1
Dibromofluoromethane (Surr)	113		73 - 120		03/29/23 13:37	10
4-Bromofluorobenzene (Surr)	100		56 - 136		03/28/23 18:48	1
4-Bromofluorobenzene (Surr)	101		56 - 136		03/29/23 13:37	10
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		03/28/23 18:48	1
1,2-Dichloroethane-d4 (Surr)	107		62 - 137		03/29/23 13:37	10

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		0.044	0.022	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4,6-Trichlorophenol	ND		0.22	0.080	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4,5-Trichlorophenol	ND		0.22	0.088	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4-Dichlorophenol	ND		0.089	0.012	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4-Dimethylphenol	ND		0.089	0.023	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4-Dinitrophenol	ND		0.44	0.28	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,4-Dinitrotoluene	ND		0.22	0.092	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Chloronaphthalene	ND		0.044	0.021	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Chlorophenol	ND		0.044	0.012	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Methylnaphthalene	ND		0.0089	0.0049	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Methylphenol	ND		0.044	0.0093	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Nitroaniline	ND		0.089	0.023	mg/L		03/28/23 08:23	03/29/23 12:21	40
2-Nitrophenol	ND		0.089	0.025	mg/L		03/28/23 08:23	03/29/23 12:21	40
3 & 4 Methylphenol	ND		0.089	0.0085	mg/L		03/28/23 08:23	03/29/23 12:21	40
3,3'-Dichlorobenzidine	ND		0.22	0.051	mg/L		03/28/23 08:23	03/29/23 12:21	40
3-Nitroaniline	ND		0.089	0.025	mg/L		03/28/23 08:23	03/29/23 12:21	40
4,6-Dinitro-2-methylphenol	ND		0.22	0.13	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Bromophenyl phenyl ether	ND		0.089	0.022	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Chloro-3-methylphenol	ND		0.089	0.013	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Chloroaniline	ND	*	0.089	0.014	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Chlorophenyl phenyl ether	ND		0.089	0.024	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Nitroaniline	ND		0.089	0.041	mg/L		03/28/23 08:23	03/29/23 12:21	40
Acenaphthene	ND		0.0089	0.0076	mg/L		03/28/23 08:23	03/29/23 12:21	40
Acenaphthylene	ND		0.0089	0.0056	mg/L		03/28/23 08:23	03/29/23 12:21	40
Acetophenone	ND		0.044	0.016	mg/L		03/28/23 08:23	03/29/23 12:21	40
Anthracene	ND		0.0089	0.0060	mg/L		03/28/23 08:23	03/29/23 12:21	40
Atrazine	ND		0.089	0.042	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzaldehyde	ND		0.089	0.034	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzo[a]anthracene	ND		0.0089	0.0076	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzo[a]pyrene	ND		0.0089	0.0077	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzo[b]fluoranthene	ND		0.0089	0.0068	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzo[g,h,i]perylene	ND		0.0089	0.0079	mg/L		03/28/23 08:23	03/29/23 12:21	40
Benzo[k]fluoranthene	ND		0.0089	0.0062	mg/L		03/28/23 08:23	03/29/23 12:21	40
Bis(2-chloroethoxy)methane	ND		0.044	0.020	mg/L		03/28/23 08:23	03/29/23 12:21	40
Bis(2-chloroethyl)ether	ND		0.044	0.018	mg/L		03/28/23 08:23	03/29/23 12:21	40
Bis(2-ethylhexyl) phthalate	ND		0.22	0.099	mg/L		03/28/23 08:23	03/29/23 12:21	40
Butyl benzyl phthalate	ND		0.089	0.030	mg/L		03/28/23 08:23	03/29/23 12:21	40
Caprolactam	ND		0.22	0.042	mg/L		03/28/23 08:23	03/29/23 12:21	40
Carbazole	ND		0.044	0.022	mg/L		03/28/23 08:23	03/29/23 12:21	40

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.0089	0.0083	mg/L		03/28/23 08:23	03/29/23 12:21	40
Di-n-butyl phthalate	ND		0.22	0.080	mg/L		03/28/23 08:23	03/29/23 12:21	40
Di-n-octyl phthalate	ND		0.089	0.036	mg/L		03/28/23 08:23	03/29/23 12:21	40
Dibenz(a,h)anthracene	ND		0.0089	0.0067	mg/L		03/28/23 08:23	03/29/23 12:21	40
Dibenzofuran	ND		0.044	0.025	mg/L		03/28/23 08:23	03/29/23 12:21	40
Diethyl phthalate	ND		0.22	0.17	mg/L		03/28/23 08:23	03/29/23 12:21	40
Dimethyl phthalate	ND		0.089	0.023	mg/L		03/28/23 08:23	03/29/23 12:21	40
Fluoranthene	ND		0.0089	0.0071	mg/L		03/28/23 08:23	03/29/23 12:21	40
Fluorene	ND		0.0089	0.0075	mg/L		03/28/23 08:23	03/29/23 12:21	40
Hexachlorobenzene	ND		0.0089	0.0072	mg/L		03/28/23 08:23	03/29/23 12:21	40
Hexachlorobutadiene	ND		0.044	0.024	mg/L		03/28/23 08:23	03/29/23 12:21	40
Hexachlorocyclopentadiene	ND		0.44	0.078	mg/L		03/28/23 08:23	03/29/23 12:21	40
Hexachloroethane	ND		0.044	0.018	mg/L		03/28/23 08:23	03/29/23 12:21	40
Indeno[1,2,3-cd]pyrene	ND		0.0089	0.0060	mg/L		03/28/23 08:23	03/29/23 12:21	40
Isophorone	ND		0.044	0.014	mg/L		03/28/23 08:23	03/29/23 12:21	40
N-Nitrosodi-n-propylamine	ND		0.044	0.011	mg/L		03/28/23 08:23	03/29/23 12:21	40
N-Nitrosodiphenylamine	ND		0.044	0.020	mg/L		03/28/23 08:23	03/29/23 12:21	40
Naphthalene	ND		0.0089	0.0048	mg/L		03/28/23 08:23	03/29/23 12:21	40
Nitrobenzene	ND		0.044	0.023	mg/L		03/28/23 08:23	03/29/23 12:21	40
Pentachlorophenol	ND		0.44	0.14	mg/L		03/28/23 08:23	03/29/23 12:21	40
Phenanthrene	ND		0.0089	0.0074	mg/L		03/28/23 08:23	03/29/23 12:21	40
Phenol	ND		0.044	0.0057	mg/L		03/28/23 08:23	03/29/23 12:21	40
Pyrene	ND		0.0089	0.0078	mg/L		03/28/23 08:23	03/29/23 12:21	40
bis (2-chloroisopropyl) ether	ND		0.044	0.024	mg/L		03/28/23 08:23	03/29/23 12:21	40
2,6-Dinitrotoluene	ND		0.22	0.094	mg/L		03/28/23 08:23	03/29/23 12:21	40
4-Nitrophenol	ND		0.44	0.097	mg/L		03/28/23 08:23	03/29/23 12:21	40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	50		46 - 137	03/28/23 08:23	03/29/23 12:21	40
Phenol-d5 (Surr)	0	S1-	26 - 120	03/28/23 08:23	03/29/23 12:21	40
Nitrobenzene-d5 (Surr)	49		24 - 120	03/28/23 08:23	03/29/23 12:21	40
2-Fluorophenol (Surr)	25		19 - 120	03/28/23 08:23	03/29/23 12:21	40
2-Fluorobiphenyl (Surr)	62		33 - 120	03/28/23 08:23	03/29/23 12:21	40
2,4,6-Tribromophenol (Surr)	35		10 - 120	03/28/23 08:23	03/29/23 12:21	40

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	2100	B	490	66	ug/L		03/28/23 08:59	03/28/23 14:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	61		52 - 121	03/28/23 08:59	03/28/23 14:46	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 16:42	1
Barium	0.024	J	0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 16:42	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 16:42	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 16:42	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 16:42	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 16:42	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 16:42	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability (Flashpoint) (SW846 1010B)	>200				Degrees F			03/28/23 20:17	1
Total Suspended Solids (SM 2540D-2015)	270		24	6.1	mg/L			03/27/23 14:06	1
Total Organic Carbon (SM 5310 C-2014)	30		10	3.5	mg/L			03/29/23 13:14	10
corrosivity by pH (SW846 9040C)	7.7	HF	0.1	0.1	SU			03/29/23 13:32	1

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182547-6

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/25/23 18:35

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 16:50	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 16:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 16:50	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 16:50	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 16:50	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 16:50	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 16:50	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 16:50	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 16:50	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 16:50	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 16:50	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 16:50	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 16:50	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 16:50	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/28/23 16:50	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 16:50	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 16:50	1
Acetone	ND		0.010	0.0054	mg/L			03/28/23 16:50	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 16:50	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 16:50	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 16:50	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 16:50	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 16:50	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 16:50	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 16:50	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 16:50	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 16:50	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 16:50	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 16:50	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 16:50	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 16:50	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 16:50	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 16:50	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 16:50	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 16:50	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 16:50	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 16:50	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 16:50	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 16:50	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 16:50	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 16:50	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 16:50	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 16:50	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 16:50	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 16:50	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 16:50	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/28/23 16:50	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/28/23 16:50	1

Eurofins Canton

Client Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182547-6

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/25/23 18:35

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	96		78 - 122		03/28/23 16:50	1
Dibromofluoromethane (Surr)	107		73 - 120		03/28/23 16:50	1
4-Bromofluorobenzene (Surr)	92		56 - 136		03/28/23 16:50	1
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		03/28/23 16:50	1

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-182547-1	WC-251633-WATER	98	107	99	101
240-182547-2	WC-AL4771-WATER	99	105	110	98
240-182547-2	WC-AL4771-WATER	105	112	112	105
240-182547-3	WC-251060-WATER	97	104	106	98
240-182547-3	WC-251060-WATER	101	110	107	102
240-182547-4	WC-251688-WATER	95	104	101	97
240-182547-4	WC-251688-WATER	100	111	98	106
240-182547-5	WC-251478-WATER	97	101	100	96
240-182547-5	WC-251478-WATER	103	113	101	107
240-182547-6	TRIP BLANK	96	107	92	104
LCS 240-567011/5	Lab Control Sample	105	105	103	98
LCS 240-567011/6	Lab Control Sample	98	105	104	101
LCS 240-567143/5	Lab Control Sample	107	106	106	101
LCS 240-567143/6	Lab Control Sample	99	106	103	103
MB 240-567011/8	Method Blank	99	108	95	101
MB 240-567143/8	Method Blank	102	115	97	111

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TPHL (46-137)	PHL (26-120)	NBZ (24-120)	2FP (19-120)	FBP (33-120)	TBP (10-120)
240-182547-1	WC-251633-WATER	30 S1-	15 S1-	46	24	60	54
240-182547-2	WC-AL4771-WATER	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-182547-3	WC-251060-WATER	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-	0 S1-
240-182547-4	WC-251688-WATER	111	24 S1-	80	36	111	97
240-182547-5	WC-251478-WATER	50	0 S1-	49	25	62	35
LCS 240-566966/24-A	Lab Control Sample	113	30	85	48	104	119
MB 240-566966/23-A	Method Blank	133	27	76	43	92	90

Surrogate Legend

TPHL = Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

2FP = 2-Fluorophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTPH (52-121)
240-182547-1	WC-251633-WATER	53
240-182547-2	WC-AL4771-WATER	59
240-182547-3	WC-251060-WATER	59
240-182547-4	WC-251688-WATER	76
240-182547-5	WC-251478-WATER	61
LCS 240-566977/2-A	Lab Control Sample	84
MB 240-566977/1-A	Method Blank	85

Surrogate Legend

OTPH = o-Terphenyl

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-567011/8
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/28/23 15:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/28/23 15:15	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/28/23 15:15	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/28/23 15:15	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/28/23 15:15	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/28/23 15:15	1
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/28/23 15:15	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/28/23 15:15	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/28/23 15:15	1
Acetone	ND		0.010	0.0054	mg/L			03/28/23 15:15	1
Benzene	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/28/23 15:15	1
Bromoform	ND		0.0010	0.00076	mg/L			03/28/23 15:15	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/28/23 15:15	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/28/23 15:15	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/28/23 15:15	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/28/23 15:15	1
Chloroform	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/28/23 15:15	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/28/23 15:15	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/28/23 15:15	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/28/23 15:15	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/28/23 15:15	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/28/23 15:15	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/28/23 15:15	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/28/23 15:15	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/28/23 15:15	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/28/23 15:15	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/28/23 15:15	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/28/23 15:15	1
Styrene	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
Toluene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/28/23 15:15	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/28/23 15:15	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/28/23 15:15	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/28/23 15:15	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/28/23 15:15	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567011/8
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		78 - 122		03/28/23 15:15	1
Dibromofluoromethane (Surr)	108		73 - 120		03/28/23 15:15	1
4-Bromofluorobenzene (Surr)	95		56 - 136		03/28/23 15:15	1
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		03/28/23 15:15	1

Lab Sample ID: LCS 240-567011/5
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				Limits
1,1,1-Trichloroethane	0.0250	0.0244		mg/L		97	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0287		mg/L		115	58 - 157
1,1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0254		mg/L		102	51 - 146
1,1,2-Trichloroethane	0.0250	0.0257		mg/L		103	70 - 138
1,1-Dichloroethane	0.0250	0.0239		mg/L		95	72 - 127
1,1-Dichloroethene	0.0250	0.0264		mg/L		106	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0264		mg/L		105	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0248		mg/L		99	53 - 135
Ethylene Dibromide	0.0250	0.0255		mg/L		102	71 - 134
1,2-Dichlorobenzene	0.0250	0.0268		mg/L		107	78 - 120
1,2-Dichloroethane	0.0250	0.0235		mg/L		94	66 - 128
1,2-Dichloropropane	0.0250	0.0249		mg/L		99	75 - 133
1,3-Dichlorobenzene	0.0250	0.0267		mg/L		107	80 - 120
1,4-Dichlorobenzene	0.0250	0.0266		mg/L		107	80 - 120
2-Butanone (MEK)	0.0500	0.0504		mg/L		101	54 - 156
2-Hexanone	0.0500	0.0560		mg/L		112	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0551		mg/L		110	46 - 158
Acetone	0.0500	0.0485		mg/L		97	50 - 149
Benzene	0.0250	0.0256		mg/L		102	77 - 123
Dichlorobromomethane	0.0250	0.0241		mg/L		96	69 - 126
Bromoform	0.0250	0.0245		mg/L		98	57 - 129
Bromomethane	0.0125	0.0120		mg/L		96	36 - 142
Carbon disulfide	0.0250	0.0256		mg/L		102	43 - 140
Carbon tetrachloride	0.0250	0.0237		mg/L		95	55 - 137
Chlorobenzene	0.0250	0.0257		mg/L		103	80 - 121
Chloroethane	0.0125	0.00970		mg/L		78	38 - 152
Chloroform	0.0250	0.0242		mg/L		97	74 - 122
Chloromethane	0.0125	0.0126		mg/L		101	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0248		mg/L		99	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0247		mg/L		99	64 - 130
Cyclohexane	0.0250	0.0263		mg/L		105	58 - 146
Chlorodibromomethane	0.0250	0.0240		mg/L		96	70 - 124
Dichlorodifluoromethane	0.0125	0.0113		mg/L		90	34 - 153
Ethylbenzene	0.0250	0.0262		mg/L		105	80 - 121
Isopropylbenzene	0.0250	0.0274		mg/L		110	74 - 128
Methyl acetate	0.0500	0.0429		mg/L		86	42 - 169
Methyl tert-butyl ether	0.0250	0.0247		mg/L		99	65 - 126
Methylcyclohexane	0.0250	0.0259		mg/L		104	62 - 136

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567011/5
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	0.0250	0.0254		mg/L		102	71 - 125
Styrene	0.0250	0.0273		mg/L		109	80 - 135
Tetrachloroethene	0.0250	0.0265		mg/L		106	76 - 123
Toluene	0.0250	0.0265		mg/L		106	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0253		mg/L		101	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0254		mg/L		101	57 - 129
Trichloroethene	0.0250	0.0240		mg/L		96	70 - 122
Trichlorofluoromethane	0.0125	0.0103		mg/L		83	30 - 170
Vinyl chloride	0.0125	0.0118		mg/L		94	60 - 144
Xylenes, Total	0.0500	0.0534		mg/L		107	80 - 121
m-Xylene & p-Xylene	0.0250	0.0270		mg/L		108	80 - 120
o-Xylene	0.0250	0.0264		mg/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	98		62 - 137

Lab Sample ID: LCS 240-567011/6
Matrix: Water
Analysis Batch: 567011

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120
4-Bromofluorobenzene (Surr)	104		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: MB 240-567143/8
Matrix: Water
Analysis Batch: 567143

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.0010	0.00048	mg/L			03/29/23 12:25	1
1,1,2,2-Tetrachloroethane	ND		0.0010	0.00060	mg/L			03/29/23 12:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.0010	0.00041	mg/L			03/29/23 12:25	1
1,1,2-Trichloroethane	ND		0.0010	0.00048	mg/L			03/29/23 12:25	1
1,1-Dichloroethane	ND		0.0010	0.00047	mg/L			03/29/23 12:25	1
1,1-Dichloroethene	ND		0.0010	0.00049	mg/L			03/29/23 12:25	1
1,2,4-Trichlorobenzene	ND		0.0010	0.00077	mg/L			03/29/23 12:25	1
1,2-Dibromo-3-Chloropropane	ND		0.0020	0.00091	mg/L			03/29/23 12:25	1
Ethylene Dibromide	ND		0.0010	0.00041	mg/L			03/29/23 12:25	1
1,2-Dichlorobenzene	ND		0.0010	0.00048	mg/L			03/29/23 12:25	1
1,2-Dichloroethane	ND		0.0010	0.00021	mg/L			03/29/23 12:25	1
1,2-Dichloropropane	ND		0.0010	0.00047	mg/L			03/29/23 12:25	1
1,3-Dichlorobenzene	ND		0.0010	0.00045	mg/L			03/29/23 12:25	1
1,4-Dichlorobenzene	ND		0.0010	0.00041	mg/L			03/29/23 12:25	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 240-567143/8
Matrix: Water
Analysis Batch: 567143

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		0.010	0.0012	mg/L			03/29/23 12:25	1
2-Hexanone	ND		0.010	0.0011	mg/L			03/29/23 12:25	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00099	mg/L			03/29/23 12:25	1
Acetone	ND		0.010	0.0054	mg/L			03/29/23 12:25	1
Benzene	ND		0.0010	0.00042	mg/L			03/29/23 12:25	1
Dichlorobromomethane	ND		0.0010	0.00017	mg/L			03/29/23 12:25	1
Bromoform	ND		0.0010	0.00076	mg/L			03/29/23 12:25	1
Bromomethane	ND		0.0010	0.00042	mg/L			03/29/23 12:25	1
Carbon disulfide	ND		0.0010	0.00059	mg/L			03/29/23 12:25	1
Carbon tetrachloride	ND		0.0010	0.00026	mg/L			03/29/23 12:25	1
Chlorobenzene	ND		0.0010	0.00038	mg/L			03/29/23 12:25	1
Chloroethane	ND		0.0010	0.00083	mg/L			03/29/23 12:25	1
Chloroform	ND		0.0010	0.00047	mg/L			03/29/23 12:25	1
Chloromethane	ND		0.0010	0.00063	mg/L			03/29/23 12:25	1
cis-1,2-Dichloroethene	ND		0.0010	0.00046	mg/L			03/29/23 12:25	1
cis-1,3-Dichloropropene	ND		0.0010	0.00061	mg/L			03/29/23 12:25	1
Cyclohexane	ND		0.0010	0.00048	mg/L			03/29/23 12:25	1
Chlorodibromomethane	ND		0.0010	0.00039	mg/L			03/29/23 12:25	1
Dichlorodifluoromethane	ND		0.0010	0.00035	mg/L			03/29/23 12:25	1
Ethylbenzene	ND		0.0010	0.00042	mg/L			03/29/23 12:25	1
Isopropylbenzene	ND		0.0010	0.00049	mg/L			03/29/23 12:25	1
Methyl acetate	ND		0.010	0.0017	mg/L			03/29/23 12:25	1
Methyl tert-butyl ether	ND		0.0010	0.00047	mg/L			03/29/23 12:25	1
Methylcyclohexane	ND		0.0010	0.00033	mg/L			03/29/23 12:25	1
Methylene Chloride	ND		0.0050	0.0026	mg/L			03/29/23 12:25	1
Styrene	ND		0.0010	0.00045	mg/L			03/29/23 12:25	1
Tetrachloroethene	ND		0.0010	0.00044	mg/L			03/29/23 12:25	1
Toluene	ND		0.0010	0.00044	mg/L			03/29/23 12:25	1
trans-1,2-Dichloroethene	ND		0.0010	0.00051	mg/L			03/29/23 12:25	1
trans-1,3-Dichloropropene	ND		0.0010	0.00067	mg/L			03/29/23 12:25	1
Trichloroethene	ND		0.0010	0.00044	mg/L			03/29/23 12:25	1
Trichlorofluoromethane	ND		0.0010	0.00045	mg/L			03/29/23 12:25	1
Vinyl chloride	ND		0.0010	0.00045	mg/L			03/29/23 12:25	1
Xylenes, Total	ND		0.0020	0.00042	mg/L			03/29/23 12:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		78 - 122		03/29/23 12:25	1
Dibromofluoromethane (Surr)	115		73 - 120		03/29/23 12:25	1
4-Bromofluorobenzene (Surr)	97		56 - 136		03/29/23 12:25	1
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		03/29/23 12:25	1

Lab Sample ID: LCS 240-567143/5
Matrix: Water
Analysis Batch: 567143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0250	0.0241		mg/L		97	64 - 131
1,1,1,2-Tetrachloroethane	0.0250	0.0285		mg/L		114	58 - 157

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 240-567143/5
Matrix: Water
Analysis Batch: 567143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0250	0.0264		mg/L		105	51 - 146
1,1,2-Trichloroethane	0.0250	0.0257		mg/L		103	70 - 138
1,1-Dichloroethane	0.0250	0.0238		mg/L		95	72 - 127
1,1-Dichloroethene	0.0250	0.0260		mg/L		104	63 - 134
1,2,4-Trichlorobenzene	0.0250	0.0260		mg/L		104	44 - 147
1,2-Dibromo-3-Chloropropane	0.0250	0.0243		mg/L		97	53 - 135
Ethylene Dibromide	0.0250	0.0248		mg/L		99	71 - 134
1,2-Dichlorobenzene	0.0250	0.0265		mg/L		106	78 - 120
1,2-Dichloroethane	0.0250	0.0236		mg/L		95	66 - 128
1,2-Dichloropropane	0.0250	0.0250		mg/L		100	75 - 133
1,3-Dichlorobenzene	0.0250	0.0261		mg/L		104	80 - 120
1,4-Dichlorobenzene	0.0250	0.0262		mg/L		105	80 - 120
2-Butanone (MEK)	0.0500	0.0492		mg/L		98	54 - 156
2-Hexanone	0.0500	0.0546		mg/L		109	43 - 167
4-Methyl-2-pentanone (MIBK)	0.0500	0.0548		mg/L		110	46 - 158
Acetone	0.0500	0.0482		mg/L		96	50 - 149
Benzene	0.0250	0.0260		mg/L		104	77 - 123
Dichlorobromomethane	0.0250	0.0239		mg/L		96	69 - 126
Bromoform	0.0250	0.0231		mg/L		92	57 - 129
Bromomethane	0.0125	0.0129		mg/L		103	36 - 142
Carbon disulfide	0.0250	0.0259		mg/L		104	43 - 140
Carbon tetrachloride	0.0250	0.0239		mg/L		96	55 - 137
Chlorobenzene	0.0250	0.0251		mg/L		100	80 - 121
Chloroethane	0.0125	0.0110		mg/L		88	38 - 152
Chloroform	0.0250	0.0243		mg/L		97	74 - 122
Chloromethane	0.0125	0.0132		mg/L		105	47 - 143
cis-1,2-Dichloroethene	0.0250	0.0251		mg/L		100	77 - 123
cis-1,3-Dichloropropene	0.0250	0.0245		mg/L		98	64 - 130
Cyclohexane	0.0250	0.0274		mg/L		109	58 - 146
Chlorodibromomethane	0.0250	0.0231		mg/L		92	70 - 124
Dichlorodifluoromethane	0.0125	0.0121		mg/L		97	34 - 153
Ethylbenzene	0.0250	0.0258		mg/L		103	80 - 121
Isopropylbenzene	0.0250	0.0270		mg/L		108	74 - 128
Methyl acetate	0.0500	0.0429		mg/L		86	42 - 169
Methyl tert-butyl ether	0.0250	0.0240		mg/L		96	65 - 126
Methylcyclohexane	0.0250	0.0270		mg/L		108	62 - 136
Methylene Chloride	0.0250	0.0253		mg/L		101	71 - 125
Styrene	0.0250	0.0267		mg/L		107	80 - 135
Tetrachloroethene	0.0250	0.0257		mg/L		103	76 - 123
Toluene	0.0250	0.0262		mg/L		105	80 - 123
trans-1,2-Dichloroethene	0.0250	0.0250		mg/L		100	75 - 124
trans-1,3-Dichloropropene	0.0250	0.0248		mg/L		99	57 - 129
Trichloroethene	0.0250	0.0237		mg/L		95	70 - 122
Trichlorofluoromethane	0.0125	0.0110		mg/L		88	30 - 170
Vinyl chloride	0.0125	0.0121		mg/L		97	60 - 144
Xylenes, Total	0.0500	0.0516		mg/L		103	80 - 121
m-Xylene & p-Xylene	0.0250	0.0258		mg/L		103	80 - 120
o-Xylene	0.0250	0.0258		mg/L		103	80 - 123

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120
4-Bromofluorobenzene (Surr)	106		56 - 136
1,2-Dichloroethane-d4 (Surr)	101		62 - 137

Lab Sample ID: LCS 240-567143/6
Matrix: Water
Analysis Batch: 567143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120
4-Bromofluorobenzene (Surr)	103		56 - 136
1,2-Dichloroethane-d4 (Surr)	103		62 - 137

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-566966/23-A
Matrix: Water
Analysis Batch: 567104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566966

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	ND		0.0010	0.00049	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4,6-Trichlorophenol	ND		0.0050	0.0018	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4,5-Trichlorophenol	ND		0.0050	0.0020	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4-Dichlorophenol	ND		0.0020	0.00026	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4-Dimethylphenol	ND		0.0020	0.00052	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4-Dinitrophenol	ND		0.010	0.0062	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,4-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Chloronaphthalene	ND		0.0010	0.00048	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Chlorophenol	ND		0.0010	0.00027	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Methylnaphthalene	ND		0.00020	0.00011	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Methylphenol	ND		0.0010	0.00021	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Nitroaniline	ND		0.0020	0.00051	mg/L		03/28/23 08:23	03/29/23 10:23	1
2-Nitrophenol	ND		0.0020	0.00056	mg/L		03/28/23 08:23	03/29/23 10:23	1
3 & 4 Methylphenol	ND		0.0020	0.00019	mg/L		03/28/23 08:23	03/29/23 10:23	1
3,3'-Dichlorobenzidine	ND		0.0050	0.0012	mg/L		03/28/23 08:23	03/29/23 10:23	1
3-Nitroaniline	ND		0.0020	0.00057	mg/L		03/28/23 08:23	03/29/23 10:23	1
4,6-Dinitro-2-methylphenol	ND		0.0050	0.0028	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Bromophenyl phenyl ether	ND		0.0020	0.00050	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Chloro-3-methylphenol	ND		0.0020	0.00030	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Chloroaniline	ND		0.0020	0.00032	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Chlorophenyl phenyl ether	ND		0.0020	0.00055	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Nitroaniline	ND		0.0020	0.00092	mg/L		03/28/23 08:23	03/29/23 10:23	1
Acenaphthene	ND		0.00020	0.00017	mg/L		03/28/23 08:23	03/29/23 10:23	1
Acenaphthylene	ND		0.00020	0.00013	mg/L		03/28/23 08:23	03/29/23 10:23	1
Acetophenone	ND		0.0010	0.00037	mg/L		03/28/23 08:23	03/29/23 10:23	1
Anthracene	ND		0.00020	0.00014	mg/L		03/28/23 08:23	03/29/23 10:23	1
Atrazine	ND		0.0020	0.00095	mg/L		03/28/23 08:23	03/29/23 10:23	1
Benzaldehyde	ND		0.0020	0.00076	mg/L		03/28/23 08:23	03/29/23 10:23	1
Benzo[a]anthracene	ND		0.00020	0.00017	mg/L		03/28/23 08:23	03/29/23 10:23	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-566966/23-A
Matrix: Water
Analysis Batch: 567104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.00020	0.00017	mg/L		03/28/23 08:23	03/29/23 10:23	1
Benzo[b]fluoranthene	ND		0.00020	0.00015	mg/L		03/28/23 08:23	03/29/23 10:23	1
Benzo[g,h,i]perylene	ND		0.00020	0.00018	mg/L		03/28/23 08:23	03/29/23 10:23	1
Benzo[k]fluoranthene	ND		0.00020	0.00014	mg/L		03/28/23 08:23	03/29/23 10:23	1
Bis(2-chloroethoxy)methane	ND		0.0010	0.00046	mg/L		03/28/23 08:23	03/29/23 10:23	1
Bis(2-chloroethyl)ether	ND		0.0010	0.00040	mg/L		03/28/23 08:23	03/29/23 10:23	1
Bis(2-ethylhexyl) phthalate	ND		0.0050	0.0022	mg/L		03/28/23 08:23	03/29/23 10:23	1
Butyl benzyl phthalate	ND		0.0020	0.00067	mg/L		03/28/23 08:23	03/29/23 10:23	1
Caprolactam	ND		0.0050	0.00093	mg/L		03/28/23 08:23	03/29/23 10:23	1
Carbazole	ND		0.0010	0.00049	mg/L		03/28/23 08:23	03/29/23 10:23	1
Chrysene	ND		0.00020	0.00019	mg/L		03/28/23 08:23	03/29/23 10:23	1
Di-n-butyl phthalate	ND		0.0050	0.0018	mg/L		03/28/23 08:23	03/29/23 10:23	1
Di-n-octyl phthalate	ND		0.0020	0.00082	mg/L		03/28/23 08:23	03/29/23 10:23	1
Dibenz(a,h)anthracene	ND		0.00020	0.00015	mg/L		03/28/23 08:23	03/29/23 10:23	1
Dibenzofuran	ND		0.0010	0.00056	mg/L		03/28/23 08:23	03/29/23 10:23	1
Diethyl phthalate	ND		0.0050	0.0038	mg/L		03/28/23 08:23	03/29/23 10:23	1
Dimethyl phthalate	ND		0.0020	0.00052	mg/L		03/28/23 08:23	03/29/23 10:23	1
Fluoranthene	ND		0.00020	0.00016	mg/L		03/28/23 08:23	03/29/23 10:23	1
Fluorene	ND		0.00020	0.00017	mg/L		03/28/23 08:23	03/29/23 10:23	1
Hexachlorobenzene	ND		0.00020	0.00016	mg/L		03/28/23 08:23	03/29/23 10:23	1
Hexachlorobutadiene	ND		0.0010	0.00054	mg/L		03/28/23 08:23	03/29/23 10:23	1
Hexachlorocyclopentadiene	ND		0.010	0.0018	mg/L		03/28/23 08:23	03/29/23 10:23	1
Hexachloroethane	ND		0.0010	0.00040	mg/L		03/28/23 08:23	03/29/23 10:23	1
Indeno[1,2,3-cd]pyrene	ND		0.00020	0.00014	mg/L		03/28/23 08:23	03/29/23 10:23	1
Isophorone	ND		0.0010	0.00032	mg/L		03/28/23 08:23	03/29/23 10:23	1
N-Nitrosodi-n-propylamine	ND		0.0010	0.00025	mg/L		03/28/23 08:23	03/29/23 10:23	1
N-Nitrosodiphenylamine	ND		0.0010	0.00044	mg/L		03/28/23 08:23	03/29/23 10:23	1
Naphthalene	ND		0.00020	0.00011	mg/L		03/28/23 08:23	03/29/23 10:23	1
Nitrobenzene	ND		0.0010	0.00051	mg/L		03/28/23 08:23	03/29/23 10:23	1
Pentachlorophenol	ND		0.010	0.0031	mg/L		03/28/23 08:23	03/29/23 10:23	1
Phenanthrene	ND		0.00020	0.00017	mg/L		03/28/23 08:23	03/29/23 10:23	1
Phenol	ND		0.0010	0.00013	mg/L		03/28/23 08:23	03/29/23 10:23	1
Pyrene	ND		0.00020	0.00018	mg/L		03/28/23 08:23	03/29/23 10:23	1
bis (2-chloroisopropyl) ether	ND		0.0010	0.00055	mg/L		03/28/23 08:23	03/29/23 10:23	1
2,6-Dinitrotoluene	ND		0.0050	0.0021	mg/L		03/28/23 08:23	03/29/23 10:23	1
4-Nitrophenol	ND		0.010	0.0022	mg/L		03/28/23 08:23	03/29/23 10:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	133		46 - 137	03/28/23 08:23	03/29/23 10:23	1
Phenol-d5 (Surr)	27		26 - 120	03/28/23 08:23	03/29/23 10:23	1
Nitrobenzene-d5 (Surr)	76		24 - 120	03/28/23 08:23	03/29/23 10:23	1
2-Fluorophenol (Surr)	43		19 - 120	03/28/23 08:23	03/29/23 10:23	1
2-Fluorobiphenyl (Surr)	92		33 - 120	03/28/23 08:23	03/29/23 10:23	1
2,4,6-Tribromophenol (Surr)	90		10 - 120	03/28/23 08:23	03/29/23 10:23	1

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566966/24-A
Matrix: Water
Analysis Batch: 567104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	0.0200	0.0188		mg/L		94	48 - 120
2,4,6-Trichlorophenol	0.0200	0.0207		mg/L		104	51 - 120
2,4,5-Trichlorophenol	0.0200	0.0205		mg/L		102	52 - 123
2,4-Dichlorophenol	0.0200	0.0181		mg/L		90	53 - 120
2,4-Dimethylphenol	0.0200	0.0151		mg/L		76	44 - 120
2,4-Dinitrophenol	0.0400	0.0342		mg/L		86	11 - 139
2,4-Dinitrotoluene	0.0200	0.0224		mg/L		112	58 - 125
2-Chloronaphthalene	0.0200	0.0193		mg/L		96	51 - 120
2-Chlorophenol	0.0200	0.0156		mg/L		78	46 - 120
2-Methylnaphthalene	0.0200	0.0174		mg/L		87	49 - 120
2-Methylphenol	0.0200	0.0129		mg/L		64	45 - 120
2-Nitroaniline	0.0200	0.0201		mg/L		100	57 - 121
2-Nitrophenol	0.0200	0.0195		mg/L		97	51 - 120
3 & 4 Methylphenol	0.0200	0.0126		mg/L		63	40 - 120
3,3'-Dichlorobenzidine	0.0400	0.0421		mg/L		105	51 - 154
3-Nitroaniline	0.0200	0.0122		mg/L		61	47 - 123
4,6-Dinitro-2-methylphenol	0.0400	0.0374		mg/L		93	49 - 130
4-Bromophenyl phenyl ether	0.0200	0.0201		mg/L		101	58 - 125
4-Chloro-3-methylphenol	0.0200	0.0186		mg/L		93	52 - 120
4-Chloroaniline	0.0200	0.00152	J *	mg/L		8	10 - 126
4-Chlorophenyl phenyl ether	0.0200	0.0205		mg/L		103	55 - 120
4-Nitroaniline	0.0200	0.0204		mg/L		102	56 - 127
Acenaphthene	0.0200	0.0191		mg/L		96	54 - 120
Acenaphthylene	0.0200	0.0192		mg/L		96	50 - 120
Acetophenone	0.0200	0.0172		mg/L		86	47 - 120
Anthracene	0.0200	0.0196		mg/L		98	58 - 121
Atrazine	0.0400	0.0398		mg/L		100	68 - 126
Benzaldehyde	0.0400	0.0320		mg/L		80	26 - 147
Benzo[a]anthracene	0.0200	0.0205		mg/L		102	61 - 120
Benzo[a]pyrene	0.0200	0.0177		mg/L		88	56 - 131
Benzo[b]fluoranthene	0.0200	0.0160		mg/L		80	57 - 130
Benzo[g,h,i]perylene	0.0200	0.0195		mg/L		98	58 - 120
Benzo[k]fluoranthene	0.0200	0.0181		mg/L		91	53 - 137
Bis(2-chloroethoxy)methane	0.0200	0.0168		mg/L		84	49 - 120
Bis(2-chloroethyl)ether	0.0200	0.0130		mg/L		65	40 - 120
Bis(2-ethylhexyl) phthalate	0.0200	0.0176		mg/L		88	60 - 126
Butyl benzyl phthalate	0.0200	0.0182		mg/L		91	58 - 124
Caprolactam	0.0400	0.00484	J	mg/L		12	10 - 120
Carbazole	0.0200	0.0205		mg/L		103	60 - 130
Chrysene	0.0200	0.0203		mg/L		102	57 - 120
Di-n-butyl phthalate	0.0200	0.0186		mg/L		93	59 - 130
Di-n-octyl phthalate	0.0200	0.0159		mg/L		79	57 - 126
Dibenz(a,h)anthracene	0.0200	0.0181		mg/L		90	58 - 120
Dibenzofuran	0.0200	0.0197		mg/L		98	54 - 120
Diethyl phthalate	0.0200	0.0211		mg/L		106	55 - 120
Dimethyl phthalate	0.0200	0.0214		mg/L		107	49 - 125
Fluoranthene	0.0200	0.0205		mg/L		103	58 - 128
Fluorene	0.0200	0.0198		mg/L		99	55 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-566966/24-A
Matrix: Water
Analysis Batch: 567104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	0.0200	0.0200		mg/L		100	55 - 120
Hexachlorobutadiene	0.0200	0.0174		mg/L		87	41 - 120
Hexachlorocyclopentadiene	0.0200	0.0130		mg/L		65	15 - 120
Hexachloroethane	0.0200	0.0163		mg/L		82	39 - 120
Indeno[1,2,3-cd]pyrene	0.0200	0.0193		mg/L		96	59 - 122
Isophorone	0.0200	0.0174		mg/L		87	51 - 120
N-Nitrosodi-n-propylamine	0.0200	0.0167		mg/L		83	49 - 120
N-Nitrosodiphenylamine	0.0200	0.0189		mg/L		95	56 - 125
Naphthalene	0.0200	0.0159		mg/L		79	46 - 120
Nitrobenzene	0.0200	0.0167		mg/L		83	47 - 120
Pentachlorophenol	0.0400	0.0287		mg/L		72	19 - 132
Phenanthrene	0.0200	0.0188		mg/L		94	55 - 120
Phenol	0.0200	0.00583		mg/L		29	10 - 120
Pyrene	0.0200	0.0210		mg/L		105	59 - 120
bis (2-chloroisopropyl) ether	0.0200	0.0150		mg/L		75	41 - 120
2,6-Dinitrotoluene	0.0200	0.0236		mg/L		118	54 - 132
4-Nitrophenol	0.0400	0.0165		mg/L		41	10 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14 (Surr)	113		46 - 137
Phenol-d5 (Surr)	30		26 - 120
Nitrobenzene-d5 (Surr)	85		24 - 120
2-Fluorophenol (Surr)	48		19 - 120
2-Fluorobiphenyl (Surr)	104		33 - 120
2,4,6-Tribromophenol (Surr)	119		10 - 120

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 240-566977/1-A
Matrix: Water
Analysis Batch: 566982

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10 - C28]	106	J	500	68	ug/L		03/28/23 08:59	03/28/23 11:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	85		52 - 121	03/28/23 08:59	03/28/23 11:31	1

Lab Sample ID: LCS 240-566977/2-A
Matrix: Water
Analysis Batch: 566982

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10 - C28]	2000	1450		ug/L		73	56 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	84		52 - 121

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-567196/2-A
Matrix: Water
Analysis Batch: 567433

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567196

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 15:25	1
Barium	ND		0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 15:25	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 15:25	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 15:25	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 15:25	1
Selenium	ND		0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 15:25	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 15:25	1

Lab Sample ID: LCS 240-567196/3-A
Matrix: Water
Analysis Batch: 567433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	2.00	2.29		mg/L		114	50 - 150
Barium	2.00	1.95		mg/L		97	50 - 150
Cadmium	1.00	1.08		mg/L		108	50 - 150
Chromium	1.00	0.990		mg/L		99	50 - 150
Lead	1.00	0.958		mg/L		96	50 - 150
Selenium	2.00	2.33		mg/L		117	50 - 150
Silver	0.100	0.106		mg/L		106	50 - 150

Lab Sample ID: LB 240-567059/1-B
Matrix: Water
Analysis Batch: 567433

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 567196

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050	0.0041	mg/L		03/29/23 14:00	03/30/23 15:21	1
Barium	ND		0.50	0.0013	mg/L		03/29/23 14:00	03/30/23 15:21	1
Cadmium	ND		0.050	0.00020	mg/L		03/29/23 14:00	03/30/23 15:21	1
Chromium	ND		0.050	0.0040	mg/L		03/29/23 14:00	03/30/23 15:21	1
Lead	ND		0.050	0.0028	mg/L		03/29/23 14:00	03/30/23 15:21	1
Selenium	0.00709	J	0.050	0.0060	mg/L		03/29/23 14:00	03/30/23 15:21	1
Silver	ND		0.050	0.00062	mg/L		03/29/23 14:00	03/30/23 15:21	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-567199/2-A
Matrix: Water
Analysis Batch: 567395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567199

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:13	1

Lab Sample ID: LCS 240-567199/3-A
Matrix: Water
Analysis Batch: 567395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00497		mg/L		99	80 - 120

Eurofins Canton

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB 240-567059/1-C
Matrix: Water
Analysis Batch: 567395

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 567199

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00013	mg/L		03/29/23 14:00	03/30/23 14:11	1

Method: 1010B - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-566838/1
Matrix: Water
Analysis Batch: 566838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ignitability (Flashpoint)	81.0	81.0		Fahrenheit		100	97 - 103

Lab Sample ID: LCS 240-567064/1
Matrix: Water
Analysis Batch: 567064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ignitability (Flashpoint)	81.0	82.6		Fahrenheit		102	97 - 103

Lab Sample ID: 240-182547-5 DU
Matrix: Water
Analysis Batch: 567064

Client Sample ID: WC-251478-WATER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ignitability (Flashpoint)	>200		>200		Degrees F		NC	20

Method: 2540D-2015 - Total Suspended Solids (Dried at 103-105°C)

Lab Sample ID: MB 240-566895/1
Matrix: Water
Analysis Batch: 566895

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.0	mg/L			03/27/23 14:06	1

Lab Sample ID: LCS 240-566895/2
Matrix: Water
Analysis Batch: 566895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	77.7	76.5		mg/L		98	64 - 120

Lab Sample ID: 240-182547-5 DU
Matrix: Water
Analysis Batch: 566895

Client Sample ID: WC-251478-WATER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	270		264		mg/L		2	10

QC Sample Results

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Method: 5310 C-2014 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 240-567211/4
Matrix: Water
Analysis Batch: 567211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.35	mg/L			03/29/23 11:34	1

Lab Sample ID: LCS 240-567211/5
Matrix: Water
Analysis Batch: 567211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	18.3	18.4		mg/L		100	85 - 115
TOC Result 1	18.3	18.5		mg/L		101	85 - 115
TOC Result 2	18.3	18.3		mg/L		100	85 - 115

Lab Sample ID: 240-182547-1 MS
Matrix: Water
Analysis Batch: 567211

Client Sample ID: WC-251633-WATER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	34		100	137		mg/L		103	65 - 134
TOC Result 1	34		100	139		mg/L		105	65 - 134
TOC Result 2	34		100	136		mg/L		102	65 - 134

Lab Sample ID: 240-182547-1 MSD
Matrix: Water
Analysis Batch: 567211

Client Sample ID: WC-251633-WATER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Total Organic Carbon	34		100	137		mg/L		103	65 - 134	0	10
TOC Result 1	34		100	138		mg/L		103	65 - 134	1	10
TOC Result 2	34		100	136		mg/L		102	65 - 134	0	10

Method: 9040C - pH

Lab Sample ID: LCS 240-567204/2
Matrix: Water
Analysis Batch: 567204

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
corrosivity by pH	9.24	9.2		SU		100	97 - 103

Lab Sample ID: 240-182547-1 DU
Matrix: Water
Analysis Batch: 567204

Client Sample ID: WC-251633-WATER
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
corrosivity by pH	7.4	HF	7.4		SU		0.3	20

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

GC/MS VOA

Analysis Batch: 567011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	8260D	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	8260D	
240-182547-3	WC-251060-WATER	Total/NA	Water	8260D	
240-182547-4	WC-251688-WATER	Total/NA	Water	8260D	
240-182547-5	WC-251478-WATER	Total/NA	Water	8260D	
240-182547-6	TRIP BLANK	Total/NA	Water	8260D	
MB 240-567011/8	Method Blank	Total/NA	Water	8260D	
LCS 240-567011/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-567011/6	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 567143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-2	WC-AL4771-WATER	Total/NA	Water	8260D	
240-182547-3	WC-251060-WATER	Total/NA	Water	8260D	
240-182547-4	WC-251688-WATER	Total/NA	Water	8260D	
240-182547-5	WC-251478-WATER	Total/NA	Water	8260D	
MB 240-567143/8	Method Blank	Total/NA	Water	8260D	
LCS 240-567143/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 240-567143/6	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 566966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	3510C	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	3510C	
240-182547-3	WC-251060-WATER	Total/NA	Water	3510C	
240-182547-4	WC-251688-WATER	Total/NA	Water	3510C	
240-182547-5	WC-251478-WATER	Total/NA	Water	3510C	
MB 240-566966/23-A	Method Blank	Total/NA	Water	3510C	
LCS 240-566966/24-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 567104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	8270E	566966
240-182547-2	WC-AL4771-WATER	Total/NA	Water	8270E	566966
240-182547-3	WC-251060-WATER	Total/NA	Water	8270E	566966
240-182547-4	WC-251688-WATER	Total/NA	Water	8270E	566966
240-182547-5	WC-251478-WATER	Total/NA	Water	8270E	566966
MB 240-566966/23-A	Method Blank	Total/NA	Water	8270E	566966
LCS 240-566966/24-A	Lab Control Sample	Total/NA	Water	8270E	566966

GC Semi VOA

Prep Batch: 566977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	3511	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	3511	
240-182547-3	WC-251060-WATER	Total/NA	Water	3511	
240-182547-4	WC-251688-WATER	Total/NA	Water	3511	
240-182547-5	WC-251478-WATER	Total/NA	Water	3511	
MB 240-566977/1-A	Method Blank	Total/NA	Water	3511	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

GC Semi VOA (Continued)

Prep Batch: 566977 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-566977/2-A	Lab Control Sample	Total/NA	Water	3511	

Analysis Batch: 566982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	8015D	566977
240-182547-2	WC-AL4771-WATER	Total/NA	Water	8015D	566977
240-182547-3	WC-251060-WATER	Total/NA	Water	8015D	566977
240-182547-4	WC-251688-WATER	Total/NA	Water	8015D	566977
240-182547-5	WC-251478-WATER	Total/NA	Water	8015D	566977
MB 240-566977/1-A	Method Blank	Total/NA	Water	8015D	566977
LCS 240-566977/2-A	Lab Control Sample	Total/NA	Water	8015D	566977

Metals

Leach Batch: 567059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	TCLP	Water	1311	
240-182547-2	WC-AL4771-WATER	TCLP	Water	1311	
240-182547-3	WC-251060-WATER	TCLP	Water	1311	
240-182547-4	WC-251688-WATER	TCLP	Water	1311	
240-182547-5	WC-251478-WATER	TCLP	Water	1311	
LB 240-567059/1-B	Method Blank	TCLP	Water	1311	
LB 240-567059/1-C	Method Blank	TCLP	Water	1311	

Prep Batch: 567196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	TCLP	Water	3010A	567059
240-182547-2	WC-AL4771-WATER	TCLP	Water	3010A	567059
240-182547-3	WC-251060-WATER	TCLP	Water	3010A	567059
240-182547-4	WC-251688-WATER	TCLP	Water	3010A	567059
240-182547-5	WC-251478-WATER	TCLP	Water	3010A	567059
LB 240-567059/1-B	Method Blank	TCLP	Water	3010A	567059
MB 240-567196/2-A	Method Blank	Total/NA	Water	3010A	
LCS 240-567196/3-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 567199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	TCLP	Water	7470A	567059
240-182547-2	WC-AL4771-WATER	TCLP	Water	7470A	567059
240-182547-3	WC-251060-WATER	TCLP	Water	7470A	567059
240-182547-4	WC-251688-WATER	TCLP	Water	7470A	567059
240-182547-5	WC-251478-WATER	TCLP	Water	7470A	567059
LB 240-567059/1-C	Method Blank	TCLP	Water	7470A	567059
MB 240-567199/2-A	Method Blank	Total/NA	Water	7470A	
LCS 240-567199/3-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 567395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	TCLP	Water	7470A	567199
240-182547-2	WC-AL4771-WATER	TCLP	Water	7470A	567199
240-182547-3	WC-251060-WATER	TCLP	Water	7470A	567199

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Metals (Continued)

Analysis Batch: 567395 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-4	WC-251688-WATER	TCLP	Water	7470A	567199
240-182547-5	WC-251478-WATER	TCLP	Water	7470A	567199
LB 240-567059/1-C	Method Blank	TCLP	Water	7470A	567199
MB 240-567199/2-A	Method Blank	Total/NA	Water	7470A	567199
LCS 240-567199/3-A	Lab Control Sample	Total/NA	Water	7470A	567199

Analysis Batch: 567433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	TCLP	Water	6010D	567196
240-182547-2	WC-AL4771-WATER	TCLP	Water	6010D	567196
240-182547-3	WC-251060-WATER	TCLP	Water	6010D	567196
240-182547-4	WC-251688-WATER	TCLP	Water	6010D	567196
240-182547-5	WC-251478-WATER	TCLP	Water	6010D	567196
LB 240-567059/1-B	Method Blank	TCLP	Water	6010D	567196
MB 240-567196/2-A	Method Blank	Total/NA	Water	6010D	567196
LCS 240-567196/3-A	Lab Control Sample	Total/NA	Water	6010D	567196

General Chemistry

Analysis Batch: 566838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	1010B	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	1010B	
LCS 240-566838/1	Lab Control Sample	Total/NA	Water	1010B	

Analysis Batch: 566895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	2540D-2015	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	2540D-2015	
240-182547-3	WC-251060-WATER	Total/NA	Water	2540D-2015	
240-182547-4	WC-251688-WATER	Total/NA	Water	2540D-2015	
240-182547-5	WC-251478-WATER	Total/NA	Water	2540D-2015	
MB 240-566895/1	Method Blank	Total/NA	Water	2540D-2015	
LCS 240-566895/2	Lab Control Sample	Total/NA	Water	2540D-2015	
240-182547-5 DU	WC-251478-WATER	Total/NA	Water	2540D-2015	

Analysis Batch: 567064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-3	WC-251060-WATER	Total/NA	Water	1010B	
240-182547-4	WC-251688-WATER	Total/NA	Water	1010B	
240-182547-5	WC-251478-WATER	Total/NA	Water	1010B	
LCS 240-567064/1	Lab Control Sample	Total/NA	Water	1010B	
240-182547-5 DU	WC-251478-WATER	Total/NA	Water	1010B	

Analysis Batch: 567204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	9040C	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	9040C	
240-182547-3	WC-251060-WATER	Total/NA	Water	9040C	
240-182547-4	WC-251688-WATER	Total/NA	Water	9040C	
240-182547-5	WC-251478-WATER	Total/NA	Water	9040C	

Eurofins Canton

QC Association Summary

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

General Chemistry (Continued)

Analysis Batch: 567204 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-567204/2	Lab Control Sample	Total/NA	Water	9040C	
240-182547-1 DU	WC-251633-WATER	Total/NA	Water	9040C	

Analysis Batch: 567211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-182547-1	WC-251633-WATER	Total/NA	Water	5310 C-2014	
240-182547-2	WC-AL4771-WATER	Total/NA	Water	5310 C-2014	
240-182547-3	WC-251060-WATER	Total/NA	Water	5310 C-2014	
240-182547-4	WC-251688-WATER	Total/NA	Water	5310 C-2014	
240-182547-5	WC-251478-WATER	Total/NA	Water	5310 C-2014	
MB 240-567211/4	Method Blank	Total/NA	Water	5310 C-2014	
LCS 240-567211/5	Lab Control Sample	Total/NA	Water	5310 C-2014	
240-182547-1 MS	WC-251633-WATER	Total/NA	Water	5310 C-2014	
240-182547-1 MSD	WC-251633-WATER	Total/NA	Water	5310 C-2014	

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251633-WATER

Lab Sample ID: 240-182547-1

Date Collected: 03/24/23 16:30

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 17:13
Total/NA	Prep	3510C			566966	MDH	EET CAN	03/28/23 08:23
Total/NA	Analysis	8270E		10	567104	MRU	EET CAN	03/29/23 11:35
Total/NA	Prep	3511			566977	LKG	EET CAN	03/28/23 08:59
Total/NA	Analysis	8015D		2	566982	EPF	EET CAN	03/28/23 12:54
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	3010A			567196	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 16:25
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	7470A			567199	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 14:29
Total/NA	Analysis	1010B		1	566838	MED	EET CAN	03/27/23 15:34
Total/NA	Analysis	2540D-2015		1	566895	GH	EET CAN	03/27/23 14:06
Total/NA	Analysis	5310 C-2014		10	567211	MED	EET CAN	03/29/23 11:59
Total/NA	Analysis	9040C		1	567204	MED	EET CAN	03/29/23 13:32

Client Sample ID: WC-AL4771-WATER

Lab Sample ID: 240-182547-2

Date Collected: 03/24/23 16:55

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 17:37
Total/NA	Analysis	8260D		4	567143	SAM	EET CAN	03/29/23 12:49
Total/NA	Prep	3510C			566966	MDH	EET CAN	03/28/23 08:23
Total/NA	Analysis	8270E		2500	567104	MRU	EET CAN	03/29/23 13:01
Total/NA	Prep	3511			566977	LKG	EET CAN	03/28/23 08:59
Total/NA	Analysis	8015D		1	566982	EPF	EET CAN	03/28/23 13:22
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	3010A			567196	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 16:30
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	7470A			567199	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 14:36
Total/NA	Analysis	1010B		1	566838	MED	EET CAN	03/27/23 15:55
Total/NA	Analysis	2540D-2015		1	566895	GH	EET CAN	03/27/23 14:06
Total/NA	Analysis	5310 C-2014		10	567211	MED	EET CAN	03/29/23 12:37
Total/NA	Analysis	9040C		1	567204	MED	EET CAN	03/29/23 13:32

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 18:01

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251060-WATER

Lab Sample ID: 240-182547-3

Date Collected: 03/24/23 16:20

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		4	567143	SAM	EET CAN	03/29/23 13:13
Total/NA	Prep	3510C			566966	MDH	EET CAN	03/28/23 08:23
Total/NA	Analysis	8270E		1250	567104	MRU	EET CAN	03/29/23 13:24
Total/NA	Prep	3511			566977	LKG	EET CAN	03/28/23 08:59
Total/NA	Analysis	8015D		1	566982	EPF	EET CAN	03/28/23 13:50
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	3010A			567196	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 16:34
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	7470A			567199	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 14:38
Total/NA	Analysis	1010B		1	567064	JWW	EET CAN	03/28/23 17:25
Total/NA	Analysis	2540D-2015		1	566895	GH	EET CAN	03/27/23 14:06
Total/NA	Analysis	5310 C-2014		10	567211	MED	EET CAN	03/29/23 12:49
Total/NA	Analysis	9040C		1	567204	MED	EET CAN	03/29/23 13:32

Client Sample ID: WC-251688-WATER

Lab Sample ID: 240-182547-4

Date Collected: 03/24/23 16:40

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 18:24
Total/NA	Analysis	8260D		40	567143	SAM	EET CAN	03/29/23 14:02
Total/NA	Prep	3510C			566966	MDH	EET CAN	03/28/23 08:23
Total/NA	Analysis	8270E		20	567104	MRU	EET CAN	03/29/23 11:58
Total/NA	Prep	3511			566977	LKG	EET CAN	03/28/23 08:59
Total/NA	Analysis	8015D		1	566982	EPF	EET CAN	03/28/23 14:18
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	3010A			567196	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 16:38
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	7470A			567199	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 14:40
Total/NA	Analysis	1010B		1	567064	JWW	EET CAN	03/28/23 18:20
Total/NA	Analysis	2540D-2015		1	566895	GH	EET CAN	03/27/23 14:06
Total/NA	Analysis	5310 C-2014		10	567211	MED	EET CAN	03/29/23 13:01
Total/NA	Analysis	9040C		1	567204	MED	EET CAN	03/29/23 13:32

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 18:48

Eurofins Canton

Lab Chronicle

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Client Sample ID: WC-251478-WATER

Lab Sample ID: 240-182547-5

Date Collected: 03/24/23 17:12

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	567143	SAM	EET CAN	03/29/23 13:37
Total/NA	Prep	3510C			566966	MDH	EET CAN	03/28/23 08:23
Total/NA	Analysis	8270E		40	567104	MRU	EET CAN	03/29/23 12:21
Total/NA	Prep	3511			566977	LKG	EET CAN	03/28/23 08:59
Total/NA	Analysis	8015D		1	566982	EPF	EET CAN	03/28/23 14:46
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	3010A			567196	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	6010D		1	567433	KLC	EET CAN	03/30/23 16:42
TCLP	Leach	1311			567059	DRJ	EET CAN	03/29/23 09:57 - 03/29/23 10:30 ¹
TCLP	Prep	7470A			567199	DEE	EET CAN	03/29/23 14:00
TCLP	Analysis	7470A		1	567395	MRL	EET CAN	03/30/23 14:42
Total/NA	Analysis	1010B		1	567064	JWW	EET CAN	03/28/23 20:17
Total/NA	Analysis	2540D-2015		1	566895	GH	EET CAN	03/27/23 14:06
Total/NA	Analysis	5310 C-2014		10	567211	MED	EET CAN	03/29/23 13:14
Total/NA	Analysis	9040C		1	567204	MED	EET CAN	03/29/23 13:32

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-182547-6

Date Collected: 03/24/23 00:00

Matrix: Water

Date Received: 03/25/23 18:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	567011	SAM	EET CAN	03/28/23 16:50

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Norfolk Southern Corporation
 Project/Site: NS East Palestine

Job ID: 240-182547-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23 *
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23 *
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-23 *
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 182547

Client Arcadis Site Name NSRR-ER

Cooler unpacked by: [Signature]

Cooler Received on 3-25-23 Opened on 3-27-23

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form
 IR GUN # _____ (CF _____ °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

- If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC293086
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

For sample #1 the ID on the COC = 25163 but the ID on the bottles = 251633. Logged per IDs on bottles. There is no ID at all on the plastic 1L bottle. Sample was determined to go with 251633 by process of

19. SAMPLE CONDITION

elimination. true 3-25-23

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



ANALYTICAL REPORT

PREPARED FOR

Attn: Carolyn Grogan
ARCADIS U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus, Ohio 43235

Generated 2/15/2023 8:06:07 AM

JOB DESCRIPTION

NS East Palestine

JOB NUMBER

240-180173-2

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
2/15/2023 8:06:07 AM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
QC Sample Results	10
QC Association Summary	11
Lab Chronicle	12
Certification Summary	13
Chain of Custody	14
Receipt Checklists	15
Isotope Dilution Summary	16



Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Job ID: 240-180173-2

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-180173-2

Receipt

The samples were received on 2/10/2023 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.2°C, 1.2°C, 2.5°C and 3.8°C

PFAS

Method PFC_IDA: The sample injection standard peak areas in the following sample: WC-Composite-01 to 05 (240-180173-7) are outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Method	Method Description	Protocol	Laboratory
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
SPE	PFAS by SPE	Lab SOP	ELLE

Protocol References:

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-180173-7	WC-Composite-01 to 05	Water	02/09/23 00:00	02/10/23 07:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Client Sample ID: WC-Composite-01 to 05

Lab Sample ID: 240-180173-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	9.4		2.1	0.31	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	8.7		2.1	0.52	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid - RA	9.8		2.1	0.31	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid - RA	8.2		2.1	0.52	ng/L	1		537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: NS East Palestine

Job ID: 240-180173-2

Client Sample ID: WC-Composite-01 to 05

Lab Sample ID: 240-180173-7

Date Collected: 02/09/23 00:00

Matrix: Water

Date Received: 02/10/23 07:00

Method: EPA 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	9.4		2.1	0.31	ng/L		02/14/23 15:19	02/15/23 06:45	1
Perfluorooctanesulfonic acid	8.7		2.1	0.52	ng/L		02/14/23 15:19	02/15/23 06:45	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOA	115		48 - 162				02/14/23 15:19	02/15/23 06:45	1
13C8 PFOS	126		51 - 159				02/14/23 15:19	02/15/23 06:45	1

Method: EPA 537 IDA - EPA 537 Isotope Dilution - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	9.8		2.1	0.31	ng/L		02/14/23 15:19	02/15/23 07:07	1
Perfluorooctanesulfonic acid	8.2		2.1	0.52	ng/L		02/14/23 15:19	02/15/23 07:07	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOA	115		48 - 162				02/14/23 15:19	02/15/23 07:07	1
13C8 PFOS	124		51 - 159				02/14/23 15:19	02/15/23 07:07	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-344533/1-A
Matrix: Water
Analysis Batch: 344292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344533

Analyte	MB MB		RL	MDL	Unit	D	Prepared		Analyzed		Dil Fac
	Result	Qualifier									
Perfluorooctanoic acid	ND		2.0	0.30	ng/L		02/14/23 15:19	02/15/23 06:11		1	
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		02/14/23 15:19	02/15/23 06:11		1	
Isotope Dilution	MB MB		Limits	Prepared		Analyzed		Dil Fac			
	%Recovery	Qualifier									
13C8 PFOA	123		48 - 162			02/14/23 15:19	02/15/23 06:11	1			
13C8 PFOS	121		51 - 159			02/14/23 15:19	02/15/23 06:11	1			

Lab Sample ID: LCS 410-344533/2-A
Matrix: Water
Analysis Batch: 344292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344533

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Perfluorooctanoic acid	25.6	23.3		ng/L		91	51 - 145	
Perfluorooctanesulfonic acid	23.7	22.4		ng/L		95	45 - 150	
Isotope Dilution	LCS LCS		Limits					
	%Recovery	Qualifier						
13C8 PFOA	124		48 - 162					
13C8 PFOS	122		51 - 159					

Lab Sample ID: LCSD 410-344533/3-A
Matrix: Water
Analysis Batch: 344292

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344533

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD	
									RPD	Limit
Perfluorooctanoic acid	25.6	23.8		ng/L		93	51 - 145	2	30	
Perfluorooctanesulfonic acid	23.7	22.2		ng/L		94	45 - 150	1	30	
Isotope Dilution	LCSD LCSD		Limits							
	%Recovery	Qualifier								
13C8 PFOA	122		48 - 162							
13C8 PFOS	125		51 - 159							

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

LCMS

Analysis Batch: 344292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-7	WC-Composite-01 to 05	Total/NA	Water	537 IDA	344533
240-180173-7 - RA	WC-Composite-01 to 05	Total/NA	Water	537 IDA	344533
MB 410-344533/1-A	Method Blank	Total/NA	Water	537 IDA	344533
LCS 410-344533/2-A	Lab Control Sample	Total/NA	Water	537 IDA	344533
LCSD 410-344533/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	344533

Prep Batch: 344533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-180173-7	WC-Composite-01 to 05	Total/NA	Water	SPE	
240-180173-7 - RA	WC-Composite-01 to 05	Total/NA	Water	SPE	
MB 410-344533/1-A	Method Blank	Total/NA	Water	SPE	
LCS 410-344533/2-A	Lab Control Sample	Total/NA	Water	SPE	
LCSD 410-344533/3-A	Lab Control Sample Dup	Total/NA	Water	SPE	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Client Sample ID: WC-Composite-01 to 05

Lab Sample ID: 240-180173-7

Date Collected: 02/09/23 00:00

Matrix: Water

Date Received: 02/10/23 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SPE			344533	JU9U	ELLE	02/14/23 15:19
Total/NA	Analysis	537 IDA		1	344292	VK3G	ELLE	02/15/23 06:45
Total/NA	Prep	SPE	RA		344533	JU9U	ELLE	02/14/23 15:19
Total/NA	Analysis	537 IDA	RA	1	344292	VK3G	ELLE	02/15/23 07:07

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
 Project/Site: NS East Palestine

Job ID: 240-180173-2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	06-30-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22 *
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	07-02-23
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23
Louisiana (All)	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	06-30-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-24
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-23
North Dakota	State	R-205	01-31-23 *
Oklahoma	NELAP	R-205	08-31-23
Oregon	NELAP	PA200001	09-11-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-24
Rhode Island	State	LAO00338	12-31-23
South Carolina	State	89002	01-31-23 *
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-22-45	08-31-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	06-14-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23
West Virginia DEP	State	055	07-31-23
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 240-180173-2

Login Number: 180173

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 02/14/23 10:48 AM

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: NS East Palestine

Job ID: 240-180173-2

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		C8PFOA (48-162)	C8PFOS (51-159)
240-180173-7	WC-Composite-01 to 05	115	126
240-180173-7 - RA	WC-Composite-01 to 05	115	124
LCS 410-344533/2-A	Lab Control Sample	124	122
LCSD 410-344533/3-A	Lab Control Sample Dup	122	125
MB 410-344533/1-A	Method Blank	123	121

Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



Profile Summary Report

Generator	NO36008	Norfolk Southern Railway	MP PC49 RAILROAD TRACKS EAST PALESTINE, OH 44413- 0000 US NE OF intersection N PLEASANT DR TAGGART RD	East Palastine OH	44413
Customer	NO36007	Norfolk Southern Railway	650 West Peachtree Street Northwest	Atlanta GA	30308

<u>Clean Harbors Profile No.</u>	<u>Waste Description</u>	<u>Waste Classification Codes</u>	<u>Profile Type</u>	<u>Approval Status</u>	<u>Exp. Date</u>
CH2580626	Soil impacted w vinyl chloride (>10x UTS)	CCRK	W	Approved	4/5/2024
	<u>EPA/State/Provincial/Texas Waste Codes</u>	U043OUTS301H			
	<u>DOT Ship Information</u>	NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (VINYL CHLORIDE, BUTYL ACRYLATE), 9, PG III			
	<u>Approved Facilities</u>	DE - Deer Park, TX Facility			

Total: 1 Profiles



WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. CH2580626

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # **OHR000221457** GENERATOR NAME: **Norfolk Southern Railway**
 GENERATOR CODE (Assigned by Clean Harbors) **NO36008** CITY **East Palastine** STATE/PROVINCE **OH** ZIP/POSTAL CODE **44413**
 ADDRESS **MP PC49 RAILROAD TRACKS** PHONE: **(404) 273-4472**
 CUSTOMER CODE (Assigned by Clean Harbors) **NO36007** CUSTOMER NAME: **Norfolk Southern Railway**
 ADDRESS **650 West Peachtree Street Northwest** CITY **Atlanta** STATE/PROVINCE **GA** ZIP/POSTAL CODE **30308**

B. WASTE DESCRIPTION

WASTE DESCRIPTION: **Soil impacted w vinyl chloride (>10x UTS)**

PROCESS GENERATING WASTE: **remediation following train derailment. Chemicals released include unused commercial grade vinyl chloride.**

IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER? **No**

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE	NUMBER OF PHASES/LAYERS				VISCOSITY (If liquid present)	COLOR
	1	2	3	TOP		
<input checked="" type="checkbox"/> SOLID WITHOUT FREE LIQUID				0.00	1 - 100 (e.g. Water)	brown, black, white
POWDER	% BY VOLUME (Approx.)			MIDDLE	101 - 500 (e.g. Motor Oil)	
MONOLITHIC SOLID				BOTTOM	501 - 10,000 (e.g. Molasses)	
LIQUID WITH NO SOLIDS					> 10,000	
LIQUID/SOLID MIXTURE						
% FREE LIQUID						
% SETTLED SOLID						
% TOTAL SUSPENDED SOLID						
SLUDGE						
GAS/AEROSOL						
	ODOR		BOILING POINT °F (°C)		MELTING POINT °F (°C)	TOTAL ORGANIC CARBON
	NONE		<= 95 (<=35)		< 140 (<60)	<= 1%
	<input checked="" type="checkbox"/> MILD		95 - 100 (35-38)		140-200 (60-93)	<input checked="" type="checkbox"/> 1-9%
	STRONG		101 - 129 (38-54)		<input checked="" type="checkbox"/> > 200 (>93)	>= 10%
	Describe:		>= 130 (>54)			
FLASH POINT °F (°C)	pH	SPECIFIC GRAVITY	ASH		BTU/LB (MJ/kg)	
< 73 (<23)	<= 2	< 0.8 (e.g. Gasoline)	< 0.1		< 2,000 (<4.6)	
73 - 100 (23-38)	2.1 - 6.9	0.8-1.0 (e.g. Ethanol)	0.1 - 1.0		<input checked="" type="checkbox"/> 2,000-5,000 (4.6-11.6)	
101 - 140 (38-60)	<input checked="" type="checkbox"/> 7 (Neutral)	1.0 (e.g. Water)	<input checked="" type="checkbox"/> Unknown		5,000-10,000 (11.6-23.2)	
141 - 200 (60-93)	7.1 - 12.4	1.0-1.2 (e.g. Antifreeze)	1.1 - 5.0		> 10,000 (>23.2)	
> 200 (>93)	>= 12.5	<input checked="" type="checkbox"/> > 1.2 (e.g. Methylene Chloride)	5.1 - 20.0		Actual:	

D. COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	MAX	UOM
DEBRIS (POLY SHEETING, PPE, WOOD)	0.0000000	5.0000000	%
GRAVEL AND ROCKS (< 3 INCHES)	15.0000000	40.0000000	%
SOIL	60.0000000	85.0000000	%
VINYL CHLORIDE	0.0000000	85.0000000	PPM

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? YES NO

If yes, describe, including dimensions:

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. **G32** SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. **W301**

E. CONSTITUENTS

Are these values based on testing or knowledge? Knowledge Testing

If constituent concentrations are based on analytical testing, analysis must be provided. Please attach document(s) using the link on the Submit tab.

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0				<input type="checkbox"/>
D005	BARIUM	100.0				<input type="checkbox"/>
D006	CADMIUM	1.0				<input type="checkbox"/>
D007	CHROMIUM	5.0				<input type="checkbox"/>
D008	LEAD	5.0				<input type="checkbox"/>
D009	MERCURY	0.2				<input type="checkbox"/>
D010	SELENIUM	1.0				<input type="checkbox"/>
D011	SILVER	5.0				<input type="checkbox"/>
VOLATILE COMPOUNDS				OTHER CONSTITUENTS		
D018	BENZENE	0.5			MAX	UOM
D019	CARBON TETRACHLORIDE	0.5				NOT APPLICABLE
D021	CHLOROBENZENE	100.0				<input type="checkbox"/>
D022	CHLOROFORM	6.0				<input type="checkbox"/>
D028	1,2-DICHLOROETHANE	0.5				<input type="checkbox"/>
D029	1,1-DICHLOROETHYLENE	0.7				<input type="checkbox"/>
D035	METHYL ETHYL KETONE	200.0				<input type="checkbox"/>
D039	TETRACHLOROETHYLENE	0.7				<input type="checkbox"/>
D040	TRICHLOROETHYLENE	0.5				<input type="checkbox"/>
D043	VINYL CHLORIDE	0.2				<input type="checkbox"/>
SEMI-VOLATILE COMPOUNDS				OTHER CONSTITUENTS		
D023	o-CRESOL	200.0				<input type="checkbox"/>
D024	m-CRESOL	200.0				<input type="checkbox"/>
D025	p-CRESOL	200.0				<input type="checkbox"/>
D026	CRESOL (TOTAL)	200.0				<input type="checkbox"/>
D027	1,4-DICHLOROBENZENE	7.5				<input type="checkbox"/>
D030	2,4-DINITROTOLUENE	0.13				<input type="checkbox"/>
D032	HEXACHLOROBENZENE	0.13				<input type="checkbox"/>
D033	HEXACHLOROBUTADIENE	0.5				<input type="checkbox"/>
D034	HEXACHLOROETHANE	3.0				<input type="checkbox"/>
D036	NITROBENZENE	2.0				<input type="checkbox"/>
D037	PENTACHLOROPHENOL	100.0				<input type="checkbox"/>
D038	PYRIDINE	5.0				<input type="checkbox"/>
D041	2,4,5-TRICHLOROPHENOL	400.0				<input type="checkbox"/>
D042	2,4,6-TRICHLOROPHENOL	2.0				<input type="checkbox"/>
PESTICIDES AND HERBICIDES				OTHER CONSTITUENTS		
D012	ENDRIN	0.02				<input type="checkbox"/>
D013	LINDANE	0.4				<input type="checkbox"/>
D014	METHOXYCHLOR	10.0				<input type="checkbox"/>
D015	TOXAPHENE	0.5				<input type="checkbox"/>
D016	2,4-D	10.0				<input type="checkbox"/>
D017	2,4,5-TP (SILVEX)	1.0				<input type="checkbox"/>
D020	CHLORDANE	0.03				<input type="checkbox"/>
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008				<input type="checkbox"/>

HOCs <input checked="" type="checkbox"/> NONE <input type="checkbox"/> < 1000 PPM <input type="checkbox"/> >= 1000 PPM	PCBs <input checked="" type="checkbox"/> NONE <input type="checkbox"/> < 50 PPM <input type="checkbox"/> >=50 PPM IF PCBs ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
--	---

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES NO (If yes, explain)

CHOOSE ALL THAT APPLY

- | | | | |
|--------------------------|-------------|-------------------|---|
| DEA REGULATED SUBSTANCES | EXPLOSIVE | FUMING | OSHA REGULATED CARCINOGENS |
| POLYMERIZABLE | RADIOACTIVE | REACTIVE MATERIAL | <input checked="" type="checkbox"/> NONE OF THE ABOVE |

Addendum

D. COMPOSITION

F. REGULATORY STATUS



1250 St. George Street
East Liverpool, Ohio 43920-3400

Telephone 330-385-7336
Telefax 330-385-7813

February 26, 2023

DAN HUNT
NORFOLK SOUTHERN RAILWAY CORP
650 W PEACHTREE ST NW # 13
ATLANTA, GA 30308-1925
UNITED STATES

RE: Generator ID Number : 224090
Wastestream : 224090-1
Waste Name : SOIL WITH VINYL CHLORIDE

Dear Dan Hunt:

In compliance with OAC 3745-54-12(B), we are notifying you that we are fully permitted to store and/or treat your waste. We will accept wastestream 224090-1 as reviewed and approved by Heritage Thermal Services, Inc. (HTS).

We at HTS look forward to the opportunity to serve you.

Sincerely,

A handwritten signature in black ink that reads "Christopher T. Pherson". The signature is written in a cursive, flowing style.

Christopher T. Pherson, President



WASTESTREAM SURVEY FORM • (877) 436-8778

www.heritage-emails.com

Please review instructions before completing this form.

Heritage Use Only Quote#	WS #
Business Type: Repeatable: <input type="checkbox"/>	Non-Repeatable: <input checked="" type="checkbox"/>
Product Code: 8033	

TSD: Coolidge, AZ Indianapolis, IN Kansas City, MO Roachdale, IN HTT Orange, TX HTS Rineco

1. GENERATOR SITE INFORMATION (Heritage # 224090)	2. BILLING INFORMATION (Heritage # 189479)
Generator Name: NORFOLK SOUTHERN RAILWAY CORP <i>COMPANY</i>	Customer Name: GREEN ROCK STRATEGIES LLC
Address: MP PC49 R/R TRACKS, NE OF N PLEASANT DR	Address: 1640 MEETING STREET RD
City, State: EAST PALESTINE, OH	City, State: CHARLESTON, SC
Zip, County: 44413	Zip, County: 29405
Tech. Contact Name: DAN HUNT	Contact Name: ACCOUNTS PAYABLE
Phone: 404 273-4472 Fax:	Phone: 843 697-5709 Fax:
24 HR Emergency No.: 800 326-1221	Email Address:
24 HR Emergency Contact: HERITAGE	ACCOUNTSPAYABLE@GREENROCK.COM
Email Address:	

3. MANIFEST MAIL ADDRESS (If different from generator)
Contact Name: DAN HUNT
Company Name: NORFOLK SOUTHERN RAILWAY CORP
Address: 650 W PEACHTREE ST NW, BOX 13
City, State, Zip: ATLANTA, GA 30308
US EPA ID Number: OHR 000 221 457
State ID Numbers:
Generator SIC/NAICS Code: 48211
Generator Status: LQG <input checked="" type="checkbox"/> SQG <input type="checkbox"/> CESQG/VSQG <input type="checkbox"/> Non-Hazardous <input type="checkbox"/>

4. Common Name: SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE

5. Process Generating Waste: REMEDIATION OF TRAIN DERAILMENT SITE

6. DOT Description: NA3077, HAZARDOUS WASTE, SOLID, NOS (VINYL CHLORIDE, BUTYL ACRYLATE), 9, PG III

7. Wastestream/Generator Information: Episodic Generation Originates from CERCLA Activity Originates in a Foreign Country NA
EPA Import/Export Consent ID: Foreign Address (if different from 1. above):

8. Identify US EPA Hazardous Waste Codes: U043

9. Identify State Waste Codes: U043

10. Universal Waste? Federal Yes No State Yes No Identify Type:

11. D001-D043, F001-F005, or F039 underlying or hazardous constituents present? Yes No NA If yes, list in Section 13.

12. US EPA Form Code: W301 **US EPA Source Code:** G32

13. Waste Composition: Using specific chemical names, when applicable, and/or non-chemical descriptions of the entire waste composition, list all constituents present in the wastestream, and identify those that are underlying hazardous constituents (UHCs), or F001-F005/F039 hazardous constituents. Attach available analysis or SDS. Total composition must equal or exceed 100%. Waste composition based on Generator/Process Knowledge (GK) and/or Laboratory Data (LD). Check where applicable.

Constituents	LD	GK	CAS Number	Conc.	Range	Units	UHC?	F-Listed?
SOIL	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			60-85	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
GRAVEL (RAIL BALLAST)	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			15-40	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
VINYL CHLORIDE	Yes <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>			0 - 59	MG/KG	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
POLY SHEETING	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			0-5	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
ROCKS (<4")	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			0-5	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>					Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>					Yes <input type="checkbox"/>	Yes <input type="checkbox"/>

14. Color: VARIES **Odor:** SLIGHT

15a. Chemical Properties		15b. Physical Properties at 70°F			
Flash Point (F°)	BTU/lb Range	Solid <input checked="" type="checkbox"/>	Free Liquids/Fail Paint Filter?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<73 <input type="checkbox"/>	Low 500	Liquid <input type="checkbox"/>	Will Waste dump out of drums?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
73-<100 <input type="checkbox"/>	High 6000	Sludge <input type="checkbox"/>	Is the waste pumpable?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
100-<140 <input type="checkbox"/>	pH Range	Semi-Solid <input type="checkbox"/>	Liquid waste Clog 1/16 nozzle	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
140-<200 <input type="checkbox"/>	Low 5	Powder <input type="checkbox"/>	Will heat improve flow?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
>200 <input checked="" type="checkbox"/>	High 11	Gas <input type="checkbox"/>	Debris? (List type in Section 13)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
			Dust Hazard?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Boiling Point (F°)	Density/Specific Gravity 1.1 - 1.5	%Solids 100	%Liquids 0		
<100 <input type="checkbox"/>	Units TON / CY	Fluid Viscosity Low <input type="checkbox"/> (water) Medium <input type="checkbox"/> (motor oil) High <input type="checkbox"/> (honey) Highest <input type="checkbox"/> (grease) N/A <input checked="" type="checkbox"/>			
>100 <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Layers Single <input checked="" type="checkbox"/> Bi-Layered <input type="checkbox"/> Multi <input type="checkbox"/>			

Common Name (same as Section # 5) SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE								
16. Check all that apply. Marking any of these may require additional documentation or follow up information for approval.								
16a. Potential High Hazards		Air Reactive <input type="checkbox"/>	Autoignitable <input type="checkbox"/>	Cyanide <input type="checkbox"/>	Explosive <input type="checkbox"/>			
Metal Fines <input type="checkbox"/>	Metal Powders <input type="checkbox"/>	Organic Peroxides <input type="checkbox"/>	Causes Cyanosis <input type="checkbox"/>	Peroxide Forming <input type="checkbox"/>				
Pyrophoric <input type="checkbox"/>	Self-Heating <input type="checkbox"/>	Shock Sensitive <input type="checkbox"/>	Oxidizers <input type="checkbox"/>	Sulfide <input type="checkbox"/>				
Temp. Control Required <input type="checkbox"/>	Temp Sensitive <input type="checkbox"/>	Water Reactive <input type="checkbox"/>	Spontaneously Combustible <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>				
16b. Other Properties		Aerosols <input type="checkbox"/>	Ammonia <input type="checkbox"/>	Asbestos <input type="checkbox"/>	Carcinogen <input type="checkbox"/>			
Chelating Agent <input type="checkbox"/>	Compressed Gas <input type="checkbox"/>	DEA Controlled Substance <input type="checkbox"/>	Dioxins, Furans <input type="checkbox"/>	Herbicide <input type="checkbox"/>				
Insecticide <input type="checkbox"/>	Lab Pack <input type="checkbox"/>	Medical <input type="checkbox"/>	Pathogen/Infectious <input type="checkbox"/>	Pesticide <input type="checkbox"/>				
Pharmaceutical/Alcohol <input type="checkbox"/>	Polymerizable <input type="checkbox"/>	Radioactive <input type="checkbox"/>	Sanitary/Biological <input type="checkbox"/>	Sharps <input type="checkbox"/>			Not Applicable <input checked="" type="checkbox"/>	
16c. Used oil? (40 CFR 279)					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Used Oil mixed with hazardous waste?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Total Halogens (TX) concentration?					< 1000 PPM <input type="checkbox"/> > 1000 PPM <input type="checkbox"/>			
16d. PCBs? (40 CFR 761)		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	If yes, PCB concentration? (PPM)		0-49 <input type="checkbox"/>	50-499 <input type="checkbox"/>	>=500 <input type="checkbox"/>
16e. Subject to Subpart CC? (40 CFR 264/5, 1080-1091, LQG 26 gal, 500ppmw VOC)					Yes <input type="checkbox"/>	No <input type="checkbox"/>		
16f. Is this an Oil Like Material subject to requirements of 40 CFR Part 112?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16g. If SIC 28, 2911, 3312, or 4953, what is the Total Annual Benzene (TAB) in Megagrams/year?					N/A			
If 3312, Generated from Coke Oven Byproduct Recovery Operations?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Subject to Benzene NESHAP controls? (40 CFR 61.340-358)					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Benzene Concentration 10 PPM or more?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Greater than 10% moisture?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16h. Is this waste subject to NESHAP controls for transfer offsite or to another company for management? If yes, identify NESHAP.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
NESHAP								
16i. Do any regulatory exclusions/exemptions apply? If yes, provide reference information.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16j. Additional Comments/Special Waste Type. Explain					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16k. Does this material require any special handling related to employee safety, storage conditions, spill clean-up, sampling, etc.? If yes, explain.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16l. Is this material overpacked or in a salvage container? If yes, explain.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16m. Is this material designated as a DOT Poison Inhalation Hazard?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16n. Does the packaging have inner containers? If yes, explain.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16o. Does this material have potential to build pressure in the container? If yes, explain.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16p. Have the containers been stored outside? If yes, condition of containers?					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16q. Has this material been rejected by another facility? If yes, explain.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
16r. Does this waste have any undisclosed hazards or prior incidents associated with it, which could affect the way it should be handled? If yes, attach detailed explanation.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
17. Transporter:		Heritage Transport <input checked="" type="checkbox"/> Other (complete below) <input type="checkbox"/>		18. Packaging		Size		
Transporter Name:		_____		Bulk Liquid <input type="checkbox"/>	Cylinder <input type="checkbox"/>	Tote (Metal) <input type="checkbox"/>	_____	
Address:		_____		Bulk Solid <input checked="" type="checkbox"/>	DT / IM Drum <input type="checkbox"/>	Tote (Poly) <input type="checkbox"/>	_____	
City, State, Zip		_____		Cu Yd Bag/Box <input type="checkbox"/>	_____			
Contact/Phone		_____		19. Volume:		22 T / Shipment 1000 T / Year		
US EPA ID No.		_____		20. Check or list attachments:				
				Lab Data <input checked="" type="checkbox"/>	Cylinder Forms <input type="checkbox"/>	Packing List <input type="checkbox"/>		
				SDS <input type="checkbox"/>	Other (list) <input type="checkbox"/>			
21. COMPLETE THIS SECTION FOR NON-HAZARDOUS MATERIAL				21a. Is this waste a listed waste? (U, P, K, or F codes)?				
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
21b. This waste is not characteristically hazardous for D001-D043 based on attached lab data (LD), attached Safety Data Sheet (SDS), or generator knowledge (GK).								
		TCLP VOLATILES		TCLP SEMI-VOLATILES		HERBICIDES & PESTICIDES		
D001 (Ignitability)	_____	D018 Benzene	_____	D023 o-Cresol	_____	D012 Endrin	_____	
D002 (Corrosivity)	_____	D019 Carbon Tetrachloride	_____	D024 m-Cresol	_____	D013 Lindane	_____	
D003 (Reactivity)	_____	D021 Chlorobenzene	_____	D025 p-Cresol	_____	D014 Methoxychlor	_____	
		D022 Chloroform	_____	D026 Cresol	_____	D015 Toxaphene	_____	
TCLP METALS		D028 1,2-Dichloroethane	_____	D027 1,4-Dichlorobenzene	_____	D016 2,4-D	_____	
D004 Arsenic	_____	D029 1,1-Dichloroethylene	_____	D030 2,4-Dinitrotoluene	_____	D017 2,4,5-TP (Silvex)	_____	
D005 Barium	_____	D035 Methyl Ethyl Ketone	_____	D032 Hexachlorobenzene	_____	D020 Chlordane	_____	
D006 Cadmium	_____	D039 Tetrachloroethylene	_____	D033 Hexachlorobutadiene	_____	D031 Heptachlor	_____	
D007 Chromium	_____	D040 Trichloroethylene	_____	D034 Hexachloroethane	_____			
D008 Lead	_____	D043 Vinyl Chloride	_____	D036 Nitrobenzene	_____			
D009 Mercury	_____			D037 Pentachlorophenol	_____			
D010 Selenium	_____			D038 Pyridine	_____			
D011 Silver	_____			D041 2,4,5-Trichlorophenol	_____			
				D042 2,4,6-Trichlorophenol	_____			

Common Name (Same as Section # 5) **SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE**

22. CERTIFICATION: Sign and date the certification. I hereby certify that I am an authorized agent of the generator, and warrant on behalf of the generator, that all information submitted herein and attached documentation contains true, accurate and complete descriptions of this material. Any sample submitted for analysis or attached laboratory data is representative of the material being offered for approval. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I will notify Heritage Environmental Services, LLC, Heritage Thermal Services, Inc., Rineco Chemical Industries, LLC, or Heritage Thermal of Texas, LLC of any changes in generator status, any information on this form, or any information on the attachments. This certification and signature apply to this form, to all attachments checked in section 20, and to the land disposal restriction notification (LDR) generated from this information. For Lab Packs only: To the best of my knowledge, all labels on the inner and outer containers, and all information recorded on the packing inventory sheet for each Lab Pack, correctly identifies the contained chemicals where testing has been necessary to characterize material in the lab pack. I have used test methods equivalent to those specified in the Permittee's current operating permit Lab Pack Procedure.

Signature: 

Printed Name: Robert Scoble

Date: 2/24/23

Company: NORTHEASTERN RAILWAY CORP



Profile Summary Report

Generator	NO35969	NORFOLK SOUTHERN RAILWAY COMPANY	MP PC49 RAILROAD TRACKS NE OF intersection N PLEASANT DR TAGGART RD	EAST PALESTINE	OH	44413
Customer	NO35943	Norfolk Southern Corporation	127 Reed Drive	Jefferson Hill	PA	15025

<u>Waste Description</u>	<u>Waste Classification Codes</u>	<u>Profile Type</u>	<u>Approval Status</u>	<u>Exp. Date</u>
Soil impacted w vinyl chloride & butyl acrylate (<10x UTS)	CBPR	W	Approved	3/8/2024
<u>EPA/State/Provincial/Texas Waste Codes</u>	U043			
<u>DOT Ship Information</u>	NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (VINYL CHLORIDE, BUTYL ACRYLATE), 9, PG III			
<u>Approved Facilities</u>	DR - Deer Trail, CO Facility			



WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. CH2567444-DR

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION #	OHR000221457	GENERATOR NAME:	NORFOLK SOUTHERN RAILWAY COMPANY
GENERATOR CODE (Assigned by Clean Harbors)	NO35969	CITY	EAST PALESTINE
ADDRESS	MP PC49 RAILROAD TRACKS NE OF intersection	STATE/PROVINCE	OH ZIP/POSTAL CODE 44413
CUSTOMER CODE (Assigned by Clean Harbors)	NO35943	PHONE:	Exemption 6 - PII
ADDRESS	127 Reed Drive	CUSTOMER NAME:	Norfolk Southern Corporation
		CITY	Jefferson Hill
		STATE/PROVINCE	PA ZIP/POSTAL CODE 15025

B. WASTE DESCRIPTION

WASTE DESCRIPTION: **Soil impacted w vinyl chloride & butyl acrylate (<10x UTS)**

PROCESS GENERATING WASTE: **remediation following train derailment**

IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER? **No**

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE <input checked="" type="checkbox"/> SOLID WITHOUT FREE LIQUID POWDER MONOLITHIC SOLID LIQUID WITH NO SOLIDS LIQUID/SOLID MIXTURE % FREE LIQUID % SETTLED SOLID % TOTAL SUSPENDED SOLID SLUDGE GAS/AEROSOL	NUMBER OF PHASES/LAYERS 1 2 3 TOP 0.00 % BY VOLUME (Approx.) MIDDLE 0.00 BOTTOM 0.00				VISCOSITY (If liquid present) 1 - 100 (e.g. Water) 101 - 500 (e.g. Motor Oil) 501 - 10,000 (e.g. Molasses) > 10,000		COLOR <u>brown,</u> <u>black,</u> <u>white</u>
	ODOR NONE <input checked="" type="checkbox"/> MILD STRONG Describe:		BOILING POINT °F (°C) <= 95 (<=35) 95 - 100 (35-38) 101 - 129 (38-54) >= 130 (>54)		MELTING POINT °F (°C) < 140 (<60) 140-200 (60-93) <input checked="" type="checkbox"/> > 200 (>93)		
FLASH POINT °F (°C) < 73 (<23) 73 - 100 (23-38) 101 -140 (38-60) 141 -200 (60-93) > 200 (>93)	pH <= 2 2.1 - 6.9 <input checked="" type="checkbox"/> 7 (Neutral) 7.1 - 12.4 >= 12.5	SPECIFIC GRAVITY < 0.8 (e.g. Gasoline) 0.8-1.0 (e.g. Ethanol) 1.0 (e.g. Water) 1.0-1.2 (e.g. Antifreeze) <input checked="" type="checkbox"/> > 1.2 (e.g. Methylene Chloride)		ASH < 0.1 0.1 - 1.0 1.1 - 5.0 5.1 - 20.0 <input checked="" type="checkbox"/> > 20 Unknown		BTU/LB (MJ/kg) < 2,000 (<4.6) <input checked="" type="checkbox"/> 2,000-5,000 (4.6-11.6) 5,000-10,000 (11.6-23.2) > 10,000 (>23.2) Actual:	

D. COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	MAX	UOM
BUTYL ACRYLATE	0.0000000	250.0000000	PPM
DEBRIS (POLY SHEETING, PPE, WOOD)	0.0000000	5.0000000	%
DIOXINS	0.0000000	0.0000000	PPB
GRAVEL AND ROCKS (< 3 INCHES)	15.0000000	40.0000000	%
SOIL	60.0000000	85.0000000	%
VINYL CHLORIDE	0.0000000	59.0000000	PPM

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? YES NO

If yes, describe, including dimensions:

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. **G32** SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. **W301**

E. CONSTITUENTS

Are these values based on testing or knowledge? Knowledge Testing

If constituent concentrations are based on analytical testing, analysis must be provided. Please attach document(s) using the link on the Submit tab.

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE	
D004	ARSENIC	5.0				<input checked="" type="checkbox"/>	
D005	BARIUM	100.0				<input checked="" type="checkbox"/>	
D006	CADMIUM	1.0				<input checked="" type="checkbox"/>	
D007	CHROMIUM	5.0				<input checked="" type="checkbox"/>	
D008	LEAD	5.0				<input checked="" type="checkbox"/>	
D009	MERCURY	0.2				<input checked="" type="checkbox"/>	
D010	SELENIUM	1.0				<input checked="" type="checkbox"/>	
D011	SILVER	5.0				<input checked="" type="checkbox"/>	
VOLATILE COMPOUNDS				OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
D018	BENZENE	0.5					<input checked="" type="checkbox"/>
D019	CARBON TETRACHLORIDE	0.5		BROMINE			<input checked="" type="checkbox"/>
D021	CHLOROBENZENE	100.0		CHLORINE			<input checked="" type="checkbox"/>
D022	CHLOROFORM	6.0		FLUORINE			<input checked="" type="checkbox"/>
D028	1,2-DICHLOROETHANE	0.5		IODINE			<input checked="" type="checkbox"/>
D029	1,1-DICHLOROETHYLENE	0.7		SULFUR			<input checked="" type="checkbox"/>
D035	METHYL ETHYL KETONE	200.0		POTASSIUM			<input checked="" type="checkbox"/>
D039	TETRACHLOROETHYLENE	0.7		SODIUM			<input checked="" type="checkbox"/>
D040	TRICHLOROETHYLENE	0.5		AMMONIA			<input checked="" type="checkbox"/>
D043	VINYL CHLORIDE	0.2		CYANIDE AMENABLE			<input checked="" type="checkbox"/>
				CYANIDE REACTIVE			<input checked="" type="checkbox"/>
				CYANIDE TOTAL			<input checked="" type="checkbox"/>
				SULFIDE REACTIVE			<input checked="" type="checkbox"/>
SEMI-VOLATILE COMPOUNDS							
D023	o-CRESOL	200.0					
D024	m-CRESOL	200.0					
D025	p-CRESOL	200.0					
D026	CRESOL (TOTAL)	200.0					
D027	1,4-DICHLOROBENZENE	7.5					
D030	2,4-DINITROTOLUENE	0.13					
D032	HEXACHLOROBENZENE	0.13					
D033	HEXACHLOROBUTADIENE	0.5					
D034	HEXACHLOROETHANE	3.0					
D036	NITROBENZENE	2.0					
D037	PENTACHLOROPHENOL	100.0					
D038	PYRIDINE	5.0					
D041	2,4,5-TRICHLOROPHENOL	400.0					
D042	2,4,6-TRICHLOROPHENOL	2.0					
PESTICIDES AND HERBICIDES							
D012	ENDRIN	0.02					
D013	LINDANE	0.4					
D014	METHOXYCHLOR	10.0					
D015	TOXAPHENE	0.5					
D016	2,4-D	10.0					
D017	2,4,5-TP (SILVEX)	1.0					
D020	CHLORDANE	0.03					
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008					

<p>HOCs</p> <input checked="" type="checkbox"/> NONE <input type="checkbox"/> < 1000 PPM <input type="checkbox"/> >= 1000 PPM	<p>PCBs</p> <input checked="" type="checkbox"/> NONE <input type="checkbox"/> < 50 PPM <input type="checkbox"/> >=50 PPM IF PCBs ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
--	---

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES NO (If yes, explain)

CHOOSE ALL THAT APPLY

- DEA REGULATED SUBSTANCES
- EXPLOSIVE
- FUMING
- OSHA REGULATED CARCINOGENS
- POLYMERIZABLE
- RADIOACTIVE
- REACTIVE MATERIAL
- NONE OF THE ABOVE



F. REGULATORY STATUS

YES NO USEPA HAZARDOUS WASTE? U043
YES NO DO ANY STATE WASTE CODES APPLY?
Texas Waste Code
YES NO DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?
YES NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
LDR CATEGORY: VARIANCE INFO: Alternate Soil Std-meets std. (with listed hazardous waste only)
YES NO IS THIS A UNIVERSAL WASTE?
YES NO IS THE GENERATOR OF THE WASTE CLASSIFIED AS A VERY SMALL QUANTITY GENERATOR (VSQG) OR A STATE EQUIVALENT DESIGNATION?
YES NO IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?
YES NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
YES NO IS THIS WASTE STREAM PROHIBITED FROM INCINERATION BASED ON THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268.3(C)?
YES NO IS THIS WASTE STREAM "USED OIL" WHICH IS TO BE MANAGED UNDER 40 CFR PART 279 - STANDARDS FOR THE MANAGEMENT OF USED OIL?
YES NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?
YES NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?
YES NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 76.6 KPA (11.1 PSIA)?
YES NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?
YES NO IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?
Hazardous Organic NESHAP (HON) rule (subpart G) Pharmaceuticals production (subpart GGG)
YES NO IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?
YES NO Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?
YES NO Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?
What is the TAB quantity for your facility? Megagram/year (1 Mg = 2,200 lbs)
The basis for this determination is: Knowledge of the Waste Or Test Data Knowledge Testing
Describe the knowledge :

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:
NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (VINYL CHLORIDE, BUTYL ACRYLATE), 9, PG III

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY [X] ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY OTHER

CONTAINERIZED 0-0 CONTAINERS/SHIPMENT STORAGE CAPACITY: CONTAINER TYPE: PORTABLE TOTE TANK BOX|CARTON|CASE CUBIC YARD BOX DRUM OTHER: DRUM SIZE:
BULK LIQUID GALLONS/SHIPMENT: 0 Min -0 Max GAL.
BULK SOLID [X] SHIPMENT UOM: [X] TON YARD TONS/YARDS/SHIPMENT: 5000.00 Min - 30000.00 Max

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

GENERATOR'S CERTIFICATION

I certify that I am authorized to execute this document as an authorized agent. I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE

NAME (PRINT) Robert J. Scoble

TITLE Mgr. Env Ops

DATE 3/24/2023

*40 CFR Sec. 264.12 required notice:

As required by Federal Resource Conservation and Recovery Act regulations found in 40 CFR Part 264.12(b) and all equivalent State hazardous waste regulations, notice is hereby provided that all Clean Harbors facilities that may be used to treat, store, and /or dispose of the hazardous waste described on this waste profile have the appropriate permits and the capacity to manage these wastes.



Please note this profile must be submitted for re-evaluation if there has been a change in the waste generating process or when there have been changes in the chemical composition or physical characteristics of the material.



Addendum

D. COMPOSITION

F. REGULATORY STATUS



Corporate Headquarters
6510 Telecom Drive, Suite 400
Indianapolis, Indiana 46278

Service Location
HERITAGE ENVIRONMENTAL
SERVICES
4370 W COUNTY ROAD 1275 N

February 28, 2023

DAN HUNT
NORFOLK SOUTHERN RAILWAY CORP
650 W PEACHTREE ST NW # 13
ATLANTA, GA 30308-1925
UNITED STATES

RE: Generator ID Number : 224090
Wastestream : 224090-2
Waste Name : SOIL WITH VINYL CHLORIDE & BUTYL ACRYLAT

Dear Dan Hunt:

Heritage Environmental Services, LLC is notifying you, in accordance with 40 CFR Part 264.12(b) and equivalent State regulation, that we have the appropriate permits for treating, storing, or disposing of your hazardous waste. We will accept wastestream 224090-2 based on the information provided that was reviewed and approved by Heritage Environmental Services, LLC.

If there are any changes that occur at your facility or to the waste that has been approved that would affect the shipping, safe handling, or a regulatory classification, please provide an appropriate notice to Heritage concerning the waste approved for acceptance.

Thank you for your business.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ernest Walker", is written over a light blue horizontal line.

Ernest Walker, President



WASTESTREAM SURVEY FORM • (877) 436-8778

www.heritage-environment.com

Please review instructions before completing this form.

Heritage Use Only Quote#	WS #
Business Type: Repeatable: <input type="checkbox"/>	Non-Repeatable: <input checked="" type="checkbox"/>
Product Code: 211	

TSD: Coolidge, AZ Indianapolis, IN Kansas City, MO Roachdale, IN HTT Orange, TX HTS Rinco

1. GENERATOR SITE INFORMATION (Heritage # 224090) Generator Name: NORFOLK SOUTHERN RAILWAY CORP <i>COMPACT 110</i> Address: MP PC49 R/R TRACKS, NE OF N PLEASANT DR City, State: EAST PALESTINE, OH Zip, County: 44413 Tech. Contact Name: DAN HUNT Phone: 404 273-4472 Fax: 24 HR Emergency No.: 800 326-1221 24 HR Emergency Contact: HERITAGE Email Address: US EPA ID Number: OHR 000 221 457 State ID Numbers: Generator SIC/NAICS Code: 48211	2. BILLING INFORMATION (Heritage # 189479) Customer Name: GREEN ROCK STRATEGIES LLC Address: 1640 MEETING STREET RD City, State: CHARLESTON, SC Zip, County: 29405 Contact Name: ACCOUNTS PAYABLE Phone: 843 697-5709 Fax: Email Address: ACCOUNTSPAYABLE@GREENROCK.COM
3. MANIFEST MAIL ADDRESS (If different from generator) Contact Name: DAN HUNT Company Name: NORFOLK SOUTHERN RAILWAY CORP Address: 650 W PEACHTREE ST NW, BOX 13 City, State, Zip: ATLANTA, GA 30308	

Generator Status: LQG SQG CESQG/VSQG Non-Hazardous

4. Common Name: SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE – MEETS 10X UTS

5. Process Generating Waste: REMEDIATION OF TRAIN DERAILMENT SITE

6. DOT Description: NA3077, HAZARDOUS WASTE, SOLID, NOS (VINYL CHLORIDE, BUTYL ACRYLATE), 9, PG III

7. Wastestream/Generator Information: Episodic Generation Originates from CERCLA Activity Originates in a Foreign Country NA
EPA Import/Export Consent ID: Foreign Address (if different from 1. above):

8. Identify US EPA Hazardous Waste Codes: U043

9. Identify State Waste Codes: U043

10. Universal Waste? Federal Yes No State Yes No Identify Type:

11. D001-D043, F001-F005, or F039 underlying or hazardous constituents present? Yes No NA If yes, list in Section 13.

12. US EPA Form Code: W301 US EPA Source Code: G32

13. Waste Composition: Using specific chemical names, when applicable, and/or non-chemical descriptions of the entire waste composition, list all constituents present in the wastestream, and identify those that are underlying hazardous constituents (UHCs), or F001-F005/F039 hazardous constituents. Attach available analysis or SDS. Total composition must equal or exceed 100%. Waste composition based on Generator/Process Knowledge (GK) and/or Laboratory Data (LD). Check where applicable.

Constituents	LD	GK	CAS Number	Conc.	Range	Units	UHC?	F-Listed?
SOIL	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			60-85	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
GRAVEL (RAIL BALLAST)	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			15-40	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
VINYL CHLORIDE	Yes <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>			0-59	MG/KG	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
POLY SHEETING	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			0-5	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
ROCKS	Yes <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>			0-5	%	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>					Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>					Yes <input type="checkbox"/>	Yes <input type="checkbox"/>

14. Color: VARIES Odor: SLIGHT

15a. Chemical Properties		15b. Physical Properties at 70°F			
Flash Point (F°)	BTU/lb Range	Solid <input checked="" type="checkbox"/>	Free Liquids/Fail Paint Filter?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<73 <input type="checkbox"/>	Low 500	Liquid <input type="checkbox"/>	Will Waste dump out of drums?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
73-<100 <input type="checkbox"/>	High 3000	Sludge <input type="checkbox"/>	Is the waste pumpable?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
100-<140 <input type="checkbox"/>	pH Range	Semi-Solid <input type="checkbox"/>	Liquid waste Clog 1/16 nozzle	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
140-<200 <input type="checkbox"/>	Low 5	Powder <input type="checkbox"/>	Will heat improve flow?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
>200 <input checked="" type="checkbox"/>	High 11	Gas <input type="checkbox"/>	Debris? (List type in Section 13)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
			Dust Hazard?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Boiling Point (F°)	Density/Specific Gravity 1.1 – 1.5	%Solids 100	%Liquids 0		
<100 <input type="checkbox"/>	Units TON / CY	Fluid Viscosity Low <input type="checkbox"/> (water) Medium <input type="checkbox"/> (motor oil) High <input type="checkbox"/> (honey) Highest <input type="checkbox"/> (grease) N/A <input checked="" type="checkbox"/>			
>100 <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	Layers Single <input checked="" type="checkbox"/> Bi-Layered <input type="checkbox"/> Multi <input type="checkbox"/>			

Common Name (same as Section # 5) SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE										
16. Check all that apply. Marking any of these may require additional documentation or follow up information for approval.										
16a. Potential High Hazards	Air Reactive <input type="checkbox"/>	Autoignitable <input type="checkbox"/>	Cyanide <input type="checkbox"/>	Explosive <input type="checkbox"/>	Metal Fines <input type="checkbox"/>	Metal Powders <input type="checkbox"/>	Organic Peroxides <input type="checkbox"/>	Causes Cyanosis <input type="checkbox"/>	Peroxide Forming <input type="checkbox"/>	
	Pyrophoric <input type="checkbox"/>	Self-Heating <input type="checkbox"/>	Shock Sensitive <input type="checkbox"/>	Oxidizers <input type="checkbox"/>	Sulfide <input type="checkbox"/>	Temp. Control Required <input type="checkbox"/>	Temp Sensitive <input type="checkbox"/>	Water Reactive <input type="checkbox"/>	Spontaneously Combustible <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>
16b. Other Properties	Aerosols <input type="checkbox"/>	Ammonia <input type="checkbox"/>	Asbestos <input type="checkbox"/>	Carcinogen <input type="checkbox"/>	Chelating Agent <input type="checkbox"/>	Compressed Gas <input type="checkbox"/>	DEA Controlled Substance <input type="checkbox"/>	Dioxins, Furans <input type="checkbox"/>	Herbicide <input type="checkbox"/>	
	Insecticide <input type="checkbox"/>	Lab Pack <input type="checkbox"/>	Medical <input type="checkbox"/>	Pathogen/Infectious <input type="checkbox"/>	Pesticide <input type="checkbox"/>	Pharmaceutical/Alcohol <input type="checkbox"/>	Polymerizable <input type="checkbox"/>	Radioactive <input type="checkbox"/>	Sanitary/Biological <input type="checkbox"/>	Sharps <input type="checkbox"/>
				Not Applicable <input checked="" type="checkbox"/>						
16c. Used oil? (40 CFR 279)								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Used Oil mixed with hazardous waste?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Total Halogens (TX) concentration?								< 1000 PPM <input type="checkbox"/>	> 1000 PPM <input type="checkbox"/>	
16d. PCBs? (40 CFR 761)		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	If yes, PCB concentration? (PPM)		0-49 <input type="checkbox"/>	50-499 <input type="checkbox"/>	>=500 <input type="checkbox"/>		
16e. Subject to Subpart CC? (40 CFR 264/5, 1080-1091, LQG 26 gal, 500ppmw VOC)								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16f. Is this an Oil Like Material subject to requirements of 40 CFR Part 112?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16g. If SIC 28 __, 2911, 3312, or 4953, what is the Total Annual Benzene (TAB) in Megagrams/year?								N/A		
If 3312, Generated from Coke Oven Byproduct Recovery Operations?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Subject to Benzene NESHAP controls? (40 CFR 61.340-358)								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Benzene Concentration 10 PPM or more?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Greater than 10% moisture?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16h. Is this waste subject to NESHAP controls for transfer offsite or to another company for management? If yes, identify NESHAP.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
NESHAP										
16i. Do any regulatory exclusions/exemptions apply? If yes, provide reference information.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16j. Additional Comments/Special Waste Type. Explain 40 CFR 268.49								Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
16k. Does this material require any special handling related to employee safety, storage conditions, spill clean-up, sampling, etc.? If yes, explain.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16l. Is this material overpacked or in a salvage container? If yes, explain.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16m. Is this material designated as a DOT Poison Inhalation Hazard?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16n. Does the packaging have inner containers? If yes, explain.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16o. Does this material have potential to build pressure in the container? If yes, explain.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16p. Have the containers been stored outside? If yes, condition of containers?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16q. Has this material been rejected by another facility? If yes, explain.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
16r. Does this waste have any undisclosed hazards or prior incidents associated with it, which could affect the way it should be handled? If yes, attach detailed explanation.								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
17. Transporter:		Heritage Transport <input checked="" type="checkbox"/>	Other (complete below) <input type="checkbox"/>	18. Packaging		Size		Size		
Transporter Name:				Bulk Liquid <input type="checkbox"/>	Cylinder <input type="checkbox"/>	Tote (Metal) <input type="checkbox"/>				
Address:				Bulk Solid <input checked="" type="checkbox"/>	DT / IM Drum <input type="checkbox"/>	Tote (Poly) <input type="checkbox"/>				
City, State, Zip				Cu Yd Bag/Box <input type="checkbox"/>						
Contact/Phone				19. Volume:		22 T / Shipment		1000 T / Year		
US EPA ID No.				20. Check or list attachments:		Lab Data <input checked="" type="checkbox"/>	Cylinder Forms <input type="checkbox"/>	Packing List <input type="checkbox"/>		
						SDS <input type="checkbox"/>	Other (list) <input type="checkbox"/>			
21. COMPLETE THIS SECTION FOR NON-HAZARDOUS MATERIAL					21a. Is this waste a listed waste? (U, P, K, or F codes)?					
					Yes <input checked="" type="checkbox"/>					
					No <input type="checkbox"/>					
21b. This waste is not characteristically hazardous for D001-D043 based on attached lab data (LD), attached Safety Data Sheet (SDS), or generator knowledge (GK).										
		TCLP VOLATILES			TCLP SEMI-VOLATILES			HERBICIDES & PESTICIDES		
D001 (Ignitability)		D018 Benzene		D023 o-Cresol		D012 Endrin				
D002 (Corrosivity)		D019 Carbon Tetrachloride		D024 m-Cresol		D013 Lindane				
D003 (Reactivity)		D021 Chlorobenzene		D025 p-Cresol		D014 Methoxychlor				
		D022 Chloroform		D026 Cresol		D015 Toxaphene				
TCLP METALS		D028 1,2-Dichloroethane		D027 1,4-Dichlorobenzene		D016 2,4-D				
D004 Arsenic		D029 1,1-Dichloroethylene		D030 2,4-Dinitrotoluene		D017 2,4,5-TP (Silvex)				
D005 Barium		D035 Methyl Ethyl Ketone		D032 Hexachlorobenzene		D020 Chlordane				
D006 Cadmium		D039 Tetrachloroethylene		D033 Hexachlorobutadiene		D031 Heptachlor				
D007 Chromium		D040 Trichloroethylene		D034 Hexachloroethane						
D008 Lead		D043 Vinyl Chloride		D036 Nitrobenzene						
D009 Mercury				D037 Pentachlorophenol						
D010 Selenium				D038 Pyridine						
D011 Silver				D041 2,4,5-Trichlorophenol						
				D042 2,4,6-Trichlorophenol						

Common Name (Same as Section # 5) **SOIL WITH VINYL CHLORIDE & BUTYL ACRYLATE**

22. CERTIFICATION: Sign and date the certification. I hereby certify that I am an authorized agent of the generator, and warrant on behalf of the generator, that all information submitted herein and attached documentation contains true, accurate and complete descriptions of this material. Any sample submitted for analysis or attached laboratory data is representative of the material being offered for approval. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I will notify Heritage Environmental Services, LLC, Heritage Thermal Services, Inc., Rineco Chemical Industries, LLC, or Heritage Thermal of Texas, LLC of any changes in generator status, any information on this form, or any information on the attachments. This certification and signature apply to this form, to all attachments checked in section 20, and to the land disposal restriction notification (LDR) generated from this information. For Lab Packs only: To the best of my knowledge, all labels on the inner and outer containers, and all information recorded on the packing inventory sheet for each Lab Pack, correctly identifies the contained chemicals where testing has been necessary to characterize material in the lab pack. I have used test methods equivalent to those specified in the Permittee's current operating permit Lab Pack Procedure.

Signature:  Printed Name: Robert Seible Date: 2/24/23 Company: AMERICAN RASDAQ CORP



March 28, 2023

Daniel Hunt, P.G.
Norfolk Southern
650 West Peachtree Street NW
Atlanta, GA 30308

RE: Approval of Waste Profile at the Andrews, Texas facility for Waste Control Specialists LLC
HW Permit No. 50358, EPA ID. No. TXD988088464

Dear Mr. Hunt:

This letter is to inform you that Waste Control Specialists LLC (WCS) has the required permits necessary for acceptance and management of the material as submitted on the Waste Profile Form submitted for **Norfolk Southern Railway Company for Soil impacted with butyl acrylate and vinyl chloride (< 10 x UTS)**. This waste has been assigned a waste profile number of **WP-9984 Rev. 1** and this number must be used on all manifests and correspondence related to this waste stream. This approval is valid for twelve (12) months and expires on **March 28, 2024**.

Waste Control Specialists LLC is pleased to have the opportunity to provide you with the quality waste management services that you need. If you have any questions or need further assistance, please feel free to contact Customer Service at (432) 525-8729 or (432) 525-8651.

WASTE CONTROL SPECIALISTS LLC
Integrated Customer Service Specialist

Corporate

17103 Preston Rd. Ste. 200
Dallas, TX 75248
Ph. 682.503.0030
Fax. 214.853.5720

Facility

P.O. Box 1129
Andrews, TX 79714
Ph. 432.525.8500
Fax. 432.203.2359

Section 1: Generator & Billing Information

EPA ID OHR000221457	
Generator Name Norfolk Southern Railway Company	Technical Contact clayton, michelle
Physical Address MP PC49 RAILROAD TRACKS NE OF N PLEASANT DR TAGGART RD INTERSECT	E-Mail michelle.clayton@arcadis.com
City, State, Zip East Palestine OH 44413	Office Phone Exemption 6 - PII Mobile Number
Generator Certification ID:	
Billing Company Norfolk Southern Railway Company	Billing Contact Dan Hunt
Mail Address 650 West Peachtree St. NW	E-Mail Daniel.Hunt@nscorp.com
City, State, Zip Atlanta GA 30308	Office Phone 404-273-4472 Mobile Number

Section 2: Attachments

Name	File Type	Nickname	Uploaded On
[EN] - BUTYL ACRYLATE - 2017-01-21.pdf	MSDS		3/18/2023
03 17 23 Alert to States.pdf	Other		3/18/2023
2-Ethylhexyl Acrylate.pdf	MSDS		3/18/2023
2023 03 19 EP Soil impacted with VC and BA less than 10X UTS_WP-9984_SIGNED.pdf	Other		3/19/2023
AFFF_MTR_HGHS_EN.pdf	MSDS		3/18/2023
ECUX 860375 Polyethylene Exxonmobil SDS.pdf	MSDS		3/18/2023
Ethylene Glycol.pdf	MSDS		3/18/2023
Excavation Map.pdf	Other		3/18/2023
Isobutylene.pdf	MSDS		3/18/2023
J180645-1 WS-2.pdf	RCRA Data		3/18/2023
J180646-1 WS-2.pdf	RCRA Data		3/18/2023
J180646-2 WS-2_Dioxins.pdf	RCRA Data		3/18/2023
J181838-1 WC-South Track east.pdf	RCRA Data		3/18/2023
J181894-1 WC-S. Track west (samples 1-7).pdf	RCRA Data		3/25/2023
J181894-1 WC-S. Track west (samples 8-14).pdf	RCRA Data		3/25/2023
Semolina Flour SDS.pdf	MSDS		3/18/2023
UTLX 100055 - petro lube oil.pdf	MSDS		3/18/2023
VINYL CHLORIDE.pdf	MSDS		3/18/2023

Section 3: Radioactive Waste Regulatory Status at the time of shipment to WCS (check only one option)

Waste is NOT regulated as NORM, TENORM, exempt radioactive waste or licensed radioactive waste. If Section 13 is not applicable, check this box.

Licensed Low Level Radioactive Waste (includes LLMW) that is considered:

- Commercial Waste generated in:
 - Texas and/or
 - Vermont
 - Any other state
- Federal Facility Waste

Radioactive Byproduct Material [11.e(2)] as defined by THSC §401.003(3)(B)

Waste will be radiologically exempt PRIOR to shipment (including exempt NORM)

Oil field NORM waste regulated by the Texas Railroad Commission that meets their exemption requirements

Section 4: Hazardous Waste Status (Check only one option)

- Waste **is not** considered RCRA Hazardous or Mixed Waste
- Waste **is** considered RCRA Hazardous or Mixed Waste, and is
 - Hazardous Waste that meets applicable 40 CFR 268 standards prior to receipt at WCS
 - Hazardous Waste that will require treatment (check only one):
 - Waste is subject to the treatment standards found in 40 CFR Part 268.40
 - Waste meets the definition of debris or lead per 40 CFR Part 268 - Macroencapsulation is a viable treatment method for this waste
 - Waste subject to the LDR alternative treatment standards for soil (40 CFR Part 268.49)

Section 5: Other Regulatory Statuses of Waste (check all that apply)

- PCB Waste regulated under TSCA: If checked, list maximum concentration of PCBs:
- Waste contains asbestos: If Checked, Is Asbestos Friable Non-Friable
- Waste contains beryllium; list maximum beryllium concentration:

Section 6a: Requested Processing Services

<input checked="" type="checkbox"/>	Direct Disposal - Waste will not require any processing prior to disposal
<input type="checkbox"/>	RCRA Treatment
<input type="checkbox"/>	WCS Dewatering / Void-Fill process
<input type="checkbox"/>	Other Processing (Please describe the processing you are requesting): <input type="text"/>
<input type="checkbox"/>	Other (Please describe): <input type="text"/>

Section 6b: Final Disposal Facility

<input checked="" type="checkbox"/>	Subtitle C RCRA Disposal Facility (No licensed Radioactive Waste at the time of disposal)		
<input type="checkbox"/>	Federal Disposal Facility	Generator Certification Name:	Waste Control Specialists LLC
<input type="checkbox"/>	Compact Disposal Facility	Certification Expiration Date:	8/31/2023 12:00:00 AM
		Generator Certification Number:	TXWCSTWCS
<input type="checkbox"/>	Byproduct Disposal Facility		
<input type="checkbox"/>	Not Disposed at WCS		

Section 7: General Description

Waste Name:	Soil impacted with butyl acrylate and vinyl chloride (< 10 x UTS)
Process Generating Waste:	Remediation of train derailment (CERCLA site). Derailment resulted in releases of unused commercial grade vinyl chloride, butyl acrylate, 2-Butoxyethanol, ethylhexyl acrylate, isobutylene, ethanol (beer), lube oil, plastic pellets and flour and included 2 cars listed as "empty, last containing benzene" based on generator knowledge these cars meet the definition of RCRA empty containers. Approximately 40 gal of AFFF concentrate was utilized by local fire dept prior to NS arrival. SDS are attached

Section 8: RCRA Waste Codes

Selected RCRA Codes:
U043 - Vinyl chloride

Selected UHC Codes in ppm:
(No Underlying Hazardous Constituents)

Section 9: EPA Regulated Chemicals

RCRA

TCLP
 Totals
 Generator's Knowledge
 ppm (mg/kg)
 ppb(ug/kg)

Antimony:	<UTS	Beryllium:	<UTS	Lead:	<UTS	Silver:	<UTS
Arsenic:	<UTS	Cadmium:	<UTS	Nickel:	<UTS	Thallium:	<UTS
Barium:	<UTS	Chromium:	<UTS	Selenium:	<UTS	Zinc:	<UTS
Mercury:	<UTS	(TCLP)					
Mercury:	<UTS	(Totals)					

Inorganic Constituents

ppm (mg/kg)
 ppb(ug/kg)

	Total	Amenable	Total
Cyanides:	0	0	0
Sulfides:	0		0
Chlorine:	0		

EPA Regulated Organic Constituents

N/A (none apply)

ppm (mg/kg)
 ppb(ug/kg)
 %by Weight
 %by Volume

Constituent	Concentration	TCLP	Totals	Gen Knowledge

Section 10: Waste Description

% by Weight
 % by Volume
 Range. Sum of Max Column must be greater than or equal to 100%

Waste Description (ie: soil, debris, etc)	Average	Min %	Max %
Soil	70%	60%	85%
gravel (rail ballast) and rocks	30%	15%	40%
debris(PPE, polysheeting, RR tie pieces, vegetation, plastic pellets, trash, metal peices, flour)	3%	0%	5%
vinyl chloride	0%	0%	0.01%
butyl acrylate	0%	0%	0.025%

Waste Profile: WP-9984 Rev 1

Section 11: Other Physical Characteristics

<input type="text" value="100"/> % solid	<input type="text" value="0"/> % sludge	<input type="text" value="0"/> % Liquid	<input type="text"/> %by Weight	<input checked="" type="checkbox"/> %by Volume	
Density Range: From: <input type="text" value="1.5"/>	To: <input type="text" value="1.7"/>	<input type="text" value="ton/cu yd"/>			
Percent Moisture content Range (Bulk Soil Only): From: <input type="text" value="5"/>	To: <input type="text" value="25"/>				
or <input type="checkbox"/> N/A (Not Bulk Soil for Disposal in CWF or FWF)					
Color: <input type="text" value="gray, brown, black"/>	Odor: <input type="text" value="mild- butyl acrylate"/>				
pH: <input type="checkbox"/> 0-2	<input type="checkbox"/> 2.1-4	<input checked="" type="checkbox"/> 4-10	<input type="checkbox"/> 10-12.4	<input type="checkbox"/> >12.4	Measured pH Value: <input type="text" value="0.0"/>
Flashpoint: <input type="checkbox"/> N/A (Waste is solid)	Actual: <input type="text"/>	<input checked="" type="checkbox"/> >200	<input type="checkbox"/> >140-200	<input type="checkbox"/> <140	
Is Waste considered biohazardous?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO			
Does waste contain Sharps?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO			
Is waste considered putrescible?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO			
Are waste containers pressurized or contain radioactive gases under pressure?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO			

Section 12: Chelating Agents

(Not Applicable)

Section 13: Radioactive Constituents

(Not Applicable)

Section 14: Shipping Information

- Shipments of this waste will NOT be DOT regulated
- Shipments of this waste WILL be DOT regulated but are NOT Class 7 radioactive shipments
- Shipments of this waste WILL be DOT Class 7 shipments

Shipments of this waste be received via: Rail Highway

Waste shipped in a DOT Cask Type A and/or Type B

List Model Numbers:

Description of the lifting mechanism for removal of the internal containers/liners (i.e. slings, gropies, etc)

Packaging Information

Container Category	Container Type Description
CM	25 cu yd intermodal

If container Category "XX" was chosen please describe "Unspecified Container Type"

Containers are over packed. Package description:

If waste is LLMW or LLRW being shipped for disposal in the RCRA/TSCA cell, will containers have less than 10% void space? Yes No

Estimated Number of Containers:

Estimated Volume:

Section 15a: Certification

N/A (IF ANY of the waste associated with this profile will be disposed in the Federal Waste Disposal Facility or the Compact Waste Disposal Facility, check N/A and complete the certification found in Section 15b. If NONE of your waste will be disposed in the Federal Waste Disposal Facility or the Compact Waste Disposal Facility, complete this certification.)

(Certification must be signed by a company officer or an authorized agent of the company)

The information contained herein is based on generator's knowledge and/or analytical data.

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine that no deliberate or willful omissions of composition properties exist and that all known or suspected hazards have been disclosed. I certify that the sample(s) provided to WCS is representative of all materials described by this document, that the materials tested are representative of all materials described by this document, and that the methods of analysis used are the appropriate analytical methods as specified in the current editions of EPA (SW-846) or equivalent methods and HASL-300 or equivalent methods as applicable.

Authorized
Signature



Date

3/27/2023

Printed Name

Robert Scoble

Title

Manager Environmental Ops

Section 15b: Licenses and Certifications for CWF



N/A (If NONE of the waste associated with this profile will be disposed in the Federal Facility Waste Disposal Facility or the Compact Waste Disposal Facility, check N/A and complete the certification found in Section 15a. If ANY of your waste will be disposed in the Federal Facility Waste Disposal Facility or the Compact Waste Disposal Facility, complete this certification.)

150 Innovation Drive
Elyria, OH 44035
www.rossenvironmental.com

2/27/2023

Chad Runnion
GREEN ROCK STRATEGIES LLC
1640 Meeting Street Rd., Suite 305
Charleston, SC 29405

Jennifer Bennison
Technical Service Rep I
Email: jbennison@rossenvironmental.com
Direct Phone: (440) 366-2048
Direct Fax: (440) 366-2348

REF: Quotation 154632 - SOIL IMPACTED WITH VINYL CHLORIDE (>10X UTS)

Dear Chad:

Thank you for offering Ross Environmental Services, Inc. (RES) the opportunity to quote Waste Product Survey(s) (WPS) # 154632. As regulation requires, I am providing the following statement on behalf of Ross Incineration Services, Inc. (RIS): The required waste stream evaluation has been completed for WPS # 154632. As part of that review, it has been determined that RIS has the appropriate permits for, and can accept, the waste that Green Rock Strategies LLC is shipping, subject to the terms and conditions of the Waste Management Agreement between RES and Green Rock Strategies LLC.

The USEPA recognizes that it is customary for transporters to modify the manifest with respect to transporter additions or substitutions, and that this activity as a common occurrence in the industry when providing waste management services. Therefore, as part of the E-Manifest rules effective June 30, 2018, amended regulatory provision 40 CFR 263.21 allows transporters to add or substitute transporters on the manifest with advanced contractual authorization to do so. We believe that our Waste Management Agreement ("WMA") and accompanying purchase orders provide the needed contractual authorization for these Services, and we will continue to fulfill your needs under the WMA.

Action Required for shipment:

- Please review the enclosed WPS(s). I have marked any items where modifications are suggested or where your input is needed. Please make any revisions necessary, complete any items left blank, then sign, date and **return all pages of the WPS(s)** to me.
- Please review the enclosed Waste Management pricing. You may use the pricing document provided as a purchase order or purchase order amendment if you wish by completing any items left blank. Sign, date and return the purchase order to me for processing.
- For transportation of this material, please refer to the previous quotation for Ross Transportation Services, Inc. (RTS).
- Vacboxes may require to be dropped for processing. Expect a 7-10 day receipt, sampling, and processing time upon delivery.

If you have any questions, please contact me at (440) 366-2048. If you would like to schedule a waste pick-up please contact the Logistics Department at (800) 783-6555. Thank you for the opportunity to be of service.

Sincerely,



Ethan Suran
Territory Sales Manager
M: (440) 219-9791 | (440) 366-2106
esuran@rossenvironmental.com

36790 Giles Road, Grafton, Ohio 44044

(440) 748-5800

US EPA ID# OHD048415665

former WPS# (if applicable)

Please do not leave any blank spaces.

1. WPS# 154632 N

2. GENERATOR INFORMATION

Generator: NORFOLK SOUTHERN RAILWAY COMPA

U.S. EPA ID #: OHR000221457

Plant Address: MP PC49 RAILROAD TRACKS

City: EAST PALESTINE

St: OH Zp: 44413

Ship From Address: EAST TAGGART STREET

City: EAST PALESTINE

St: OH Zp: 44413

Emergency #: (404)-273-4472

After hours #: (404)-273-4472

Business contact: Chad Runnion

Business title: Senior Business Manager

Mailing Address: 1640 Meeting Street Rd, Suite 305

City: Charleston

State: SC Zip: 29405

Phone: (843)-697-5709 Ext.:

Cell: Exemption 6 - PII

Technical contact: Dan Hunt

Mailing Address: 650 W Peachtree Street NW

City: Atlanta

State: GA Zip: 30308

Phone: (404)-273-4472 Ext.:

Cell: (

3. GENERAL INFORMATION

Waste name: SOIL IMPACTED WITH VINYL CHLORIDE (>10X UTS)

Was this waste generated from a CERCLA activity: Y

Do you receive RCRA hazardous waste from another company: N

Are you the original generator: Y

Do you produce, use, or receive munitions or explosives: N

Is facility a 10 Mg Generator, per 40 CFR 61.340: N

Generator code:

Waste generating process: REMEDIATION FROM RAIL DERAILMENT

Primary business activity at generating facility: RAIL TRANSPORT

Rate of Generation

Container

Quantity

Time

Period

Accum

One Time

Service Agreement Entity

END DUMPS

200

YEAR

200

N

GREEN ROCK STRATEGIES LLC

Per Subpart CC,

VOC > 500 ppm: N

Physical Descr: SOIL WITH POSSIBLE DEBRIS/SLUDGE POSSIBLY WHITE

4. SHIPPING CONTAINERS (must meet DOT/RCRA requirements)

Drum Size

Material of

D.O.T.

Gal.

Construction

Specification

Bulk shipment: END DUMPS, ROLL-OFFS

Pallet: N Gaylord: N Hopper: N Drum: N

Overall: Length: Width: Height: Volume:

Waste: Length: Width: Height:

6. SOURCE OF INFORMATION

Method used to obtain a representative

sample of the analyzed waste:

GENERATOR KNOWLEDGE

MSDS

Other: SDS FOR VINYL CHLORIDE IN CSDB

7. SPECIFIC ANALYSIS OF WASTE (p=ppm)

A. Organic Bound Total B. Metals maximum content: Y

Constituents Concentration Sb 25.00p Pb 25.00p

Range Wt%: Y Range Wt%: As 10.00p Hg .00p

S .0 .1 .0 .1 Ba 25.00p Ni 1.00p

Cl .0 2.8 .0 2.8 Be 1.00p Se 1.00p

P .0 .1 .0 .1 Cd 20.00p Ag 25.00p

Br .0 .1 .0 .1 Cr 25.00p Tl 25.00p

I .0 .1 .0 .1 Cu 1.00p Zn 1.00p

N .0 .1 .0 .1 Li 1.00p Mo 1.00p

P .0 .1 .0 .1 Al 6.0 8.5% Si 18.0 25.5

Mg 1.2 2.6% Na 1.8 2.6

C. Does the waste contain: K 1.8 2.6%

PCBs: N

Asbestos: N Is this waste TSCA regulated: N

Insecticides, pesticides, herbicides, rodenticides: N

Name Concentration ppm/%

Dioxin: N Detection Limit: .000 %

Total available cyanides >250 ppm: N

Amenable cyanide: N Concentration: .000 %

Total available sulfides >500 ppm: N

Radioactivity above background: N

Infectious waste: N

TOTAL >= 100%

36790 Giles Road, Grafton, Ohio 44044

(440) 748-5800

US EPA ID# OH048415665

former WPS# (if applicable)

Please do not leave any blank spaces.

1. WPS# 154632 N

8. PHYSICAL PROPERTIES

Physical state 70° F: Solid Sludge

Toxicity (Using HMIS System): 2

Eye: Y

Viscosity at 70° F:

Dusting Hazard? N

Inhalation: Y

***** CPS Range *****

Dermal: Y

From To Fixed Description

Ingestion: Y

0 0 0

Other: N

Is material pumpable at 70° F (<2,000 cP)? N Describe:

Carcinogen: N

Attach supporting data, including detection limit

Is material multi-layered? N Describe:

10. EPA AND DOT INFORMATION

Description of Layer

From To Fixed

A. Is this waste hazardous as defined in 40 CFR: Y
Part 261 (OAC) 3745-51?

1. (Top)

0 0 0

B. EPA Haz. Waste No.(s) / Reason for Selection

2.

0 0 0

U043 / Vinyl chloride

3.

0 0 0

Dissolved solids: 0 %WT Suspended solids: 0 %WT

BTU/lb.: 0 to 12000 Ash content: 99 %WT

Flash pt: N/A °F Vap pr: N/A 70°F

Specific gravity: 2.000 to 2.500 pH: N/A

Corrosivity MPY: <30

Colors: BLACK

BROWN

VARIOUS

Odorous? Y MILD

C. State Haz. Waste No.(s) / Reason for Selection

9. REACTIVITY AND STABILITY

A. Reactivity group number(s): 101

D. DOT Description:

B. Is material stable? Y (If unstable i.e., polymerization with age, water/air reactive please explain below)

NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (VINYL CHLORIDE), 9, PG III, RQ, (U043)

C. Sensitive: Shock? N Heat? N Friction? N

D. Is this waste stream reactive as defined by DOT? N

11. LAND DISPOSAL RESTRICTIONS

DOT "Poison inhalation hazard?" N

A. Have treatment standards/methods been established? Y
If yes, refer to 40CFR 268.40 for the Universal Treatment Standards

Container label(s): Placard(s):
CLASS 9 CLASS 9

B. Wastewater: N Non-wastewater: Y

C. Is this waste a lab pack (Y) / loose pack (L)? N

COMMENTS:

THIS WASTE IS NOT SHOCK OR FRICTION SENSITIVE, SPONTANEOUSLY COMBUSTIBLE, PYROPHORIC OR EXPLOSIVE. CONTAINERS ARE SAFE FOR RIS TO OPEN, INSPECT AND SAMPLE RAILROAD TIES MUST BE LESS <4FT; NO STEEL PLATES/SPIKES CONCRETE MUST BE NO LARGER THAN 1FT IN ANY DIRECTION. NO REBAR, PLATES OR PUMPS, NO OBNOXIOUS ODOR.

12. ACCOUNTABILITY STATEMENT

I hereby certify that I have personally examined and am familiar with the information submitted in this and all attached documents. Based on my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete and all known and suspected hazards have been disclosed.

R. Nathan Williams

Authorized Signature

2/27/2023

Date

R. Nathan Williams

Print Name

Manager Environmental ops

Print Title

Clayton, Michelle

From: Joshua Lindley <Lindley@callspsi.com>
Sent: Tuesday, March 21, 2023 4:10 PM
To: Clayton, Michelle
Subject: FW: Approval Number

See below

Josh Lindley, RSO



Compliance Manager

O: 724-228-2700

C: 724-579-8700

You can only do better if your willing to make a change

From: Frank Marine <frank.marine@vlses.com>
Sent: Tuesday, February 14, 2023 2:23 PM
To: Joshua Lindley <Lindley@callspsi.com>
Subject: Approval Number

Josh,

We are doing what we can to get as many items cleared up as possible

This is the proposed and preliminary approval number for the East Palestine hazardous water project: **13230211**. This number would be entered in Section 14 of the manifest.

This approval number is not active until the waste profile is signed and returned to us, we send you a confirmation (Sales & Pricing Agreement), and it signed by SPSI and returned.

Anything you do with this number like printing manifests is at your own risk. We will not accept any trailers for delivery that are not formally approved.

Frank

Frank Marine
Business Development | Waste

Cell: (281) 222-6641
Office: (281) 930-2500
2525 Independence Parkway S, Deer Park, Tx 77536
frank.marine@vlses.com | www.vlses.com





TM Deer Park Services LLC

TM Deer Park Services LLC

2525 Independence Parkway South, P.O. Box 1914, Deer Park, TX 77536

SERVICE AND PRICING AGREEMENT

U.S. EPA ID Number TXD000719518

Date: **02/15/2023**

State Facility's ID 32299

CUSTOMER:

SPECIALIZED PROFESSIONAL SERVICES, INC.
ATTN: ACCOUNTS PAYABLE
300 COMMERCIAL DRIVE
WASHINGTON, PA 15301

GENERATOR:

NORFOLK SOUTHERN RAILWAY CORPORATION
MP PC49 RAILROAD TRACKS NE of N PLEASANT DR-TAGGART RD INT.
EAST PALESTINE, OH 44413

Waste Stream Number: **13230231**

Waste Description: **VCM, LUBE OIL, GLYCOLS IMPACTED WATER**

Handling Code: **H134**

Account Manager: **GARY BURTON**

Estimated Volume: **Varies**

PAYMENT TERMS:

NO CREDIT IS BEING OFFERED TO CUSTOMER. ALL WASTE SERVICES WILL BE PROVIDED AND WASTE MATERIAL WILL ONLY BE ACCEPTED ONLY IF FULL PAYMENT FOR CHARGES AND FEES ARE DEPOSITED WITH TMDP IN ADVANCE. FOR SPECIFICS, SEE SECTION 12 OF THE GENERAL TERMS AND CONDITIONS FOR WASTE SERVICES BY TM DEER PARK SERVICES LIMITED PARTNERSHIP, TMDP FORM NO. DPW080424 AS MODIFIED FOR SPSI PROJECT EFFECTIVE FEBRUARY 15, 2023.

DISPOSAL:

Disposal per Gallon:

NOTE: MAX TEMPERATURE ON LOADS <130°F.

\$ 0.82 (NEAT; must filter in <15 seconds)

\$ 0.82 (1:1; must filter in <15 seconds)

\$ 0.87 (3:1; must filter in <15 seconds)

\$ 0.97 (10:1; must filter in <15 seconds)

>10:1 SPECIAL PRICING OR SUBJECT TO REJECTION

\$1.95 Batch Pricing (includes up to 10% solids. Solids >10% will be case by case)

Suspended Solids:

\$ 0.06 per gallon 0.5%

Insoluble Organic Fraction:

\$ 0.03 per gallon 0.5%

Minimum Disposal per Load:

2,500 Gallons

Weekend/Holiday Fee:

WAIVED

EPA e-Manifest Fee:

\$ 25.00

TRANSPORTATION:

Trailer Rinse out:

CUSTOMER TRANSPORTS

\$125.00 when requested. This is not a certified wash.

GOVERNMENT FEES:

State of Texas Commercial Waste Fees are charged based on applicable waste class and handling code(s).

WASTE IDENTIFICATION/ACCEPTANCE: The Waste Profile Document provided by CUSTOMER describes Conforming Waste and is incorporated by reference into this Service and Pricing Agreement. TM DEER PARK SERVICES LLC (hereinafter "TMDP") is an appropriately permitted facility and will provide Waste Services for Conforming Waste at its facilities or the facilities of its affiliates, or may subcontract with other permitted facilities (including affiliates) for the Waste Services. However, use of an affiliate or subcontractor shall not relieve of its obligations under this Agreement. **SCHEDULING/SHIPPING:** Scheduling must be arranged through TMDPS by calling Scheduling at (281) 930-2540 between 8:00 AM - 5:00 PM Mon.-Fri. at least 48 hours in advance unless TMDP agrees otherwise. Shipments must travel with a Uniform Hazardous Waste Manifest and a Land Disposal Restriction Notification (LDRN), where applicable. CUSTOMER acknowledges that it has received and understands TMDP's procedures for entry and exit to and from its facilities and agrees to comply with such procedures. Any violation of these procedures by CUSTOMER or its agents shall for all purposes be considered material and TMDP shall have, in addition to any other remedy available, the option, in its sole discretion, to terminate this Agreement without prior notice, upon TMDP's determination, in its sole discretion, that CUSTOMER or any of its employees, invitees, contractors, or other agents are not in complete compliance with all such procedures.

EFFECTIVE DATE: This Service and Price Agreement shall be effective as of the date of acceptance by CUSTOMER.

ACCEPTANCE: The proposal for this Service and Price Agreement must be accepted by CUSTOMER within 30 calendar days from the Price Effective Date above or it shall be null and void. Acceptance by CUSTOMER shall be by (i) signature below and return to TMDP by facsimile, mail, electronic mail, over night service or USPS or (ii) in the event CUSTOMER has accepted an earlier service and price agreement in this form which adopted by reference TMDP Form No. DPW080424 by signature as provided for in Subsection (i) above, then acceptance of this Service and Price Agreement shall be considered completed by CUSTOMER upon CUSTOMER's delivery of Waste Material covered by this Agreement to TMDP.

TM DEER PARK SERVICES LLC

CUSTOMER

By: *J Bracher*
Authorized Representative

By: _____
Authorized Representative

Date: 02/15/2023

Date: _____

General Terms and Conditions for Waste Services
by TM Deer Park Services Limited Partnership
TMDP Form No. DPW080424 as Modified for SPSI/Norfolk Southern Project
EFFECTIVE FEBRUARY 15, 2023

The following terms and conditions shall apply to all waste services performed by or under the control of TM DEER PARK SERVICES LIMITED PARTNERSHIP, including transportation, storage, treatment and disposal services.

1. Definitions

1.1 "Generator" shall mean TMDP's customer and/or any third-party generator of Waste Material for which the TMDP customer is acting.

1.2 "Party" shall mean either TMDP or Generator or both.

1.3 "TMDP" shall mean TM Deer Park Service LLC, a Limited Liability Company.

1.4 "Waste Material" shall mean those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in Generator's waste profile document. The term "Waste Material" also includes containers supplied by Generator containing Waste Material such as a barrel, drum, tank or box.

1.5 "Waste Services" shall mean the handling, packaging, transportation, storage, processing, treatment, reclamation, recycling, recovery, incineration and/or disposal of Waste Material by TMDP or its affiliates or subcontractor(s).

2. In no event shall any term or condition attached or made part of a future purchase order, shipping document, manifest or other document associated with the Waste Material and/or Waste Services have any controlling effect unless specifically adopted in writing by an authorized representative of both TMDP and Generator making specific reference to both these Terms and Conditions and their amendment, supplement or modification.

3. Upon delivery of the Waste Material to TMDP, Generator shall tender to TMDP those completed documents, shipping papers or manifests as are required for lawful transfer of the Waste Material to TMDP by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state or local governments.

4. TMDP shall have the right, but not the obligation, to inspect, sample, analyze or test any tendered Waste Material before accepting such Waste Material.

5. A Waste Material shall be considered to be non-conforming if

5.1 the Waste Material is not materially in accordance with the specifications of the Generator's waste profile document, or

5.2 the Waste Materials

- (a) Materially increases the nature or extent of the hazard and risk undertaken by TMDP in agreeing to provide Waste Services, or
- (b) are such that TMDP's facility is not designated, permitted or authorized to provide the Waste Services by law, rule, or regulation.

6. If the Waste Material, any unit thereof, or the tender of delivery is non-conforming, TMDP may, at any time after its receipt of the Waste Material and at its exclusive option:

- (a) reject all Waste Material tendered, or
- (b) accept all Waste Material tendered; or,
- (c) accept any unit or units of Waste Materials and reject the rest.

Unless TMDP specifically provides to the contrary in writing, failure of TMDP to reject non-conforming Waste Material shall not be deemed acceptance of the non-conforming Waste Material. Upon rejection of Waste Material, Generator shall be responsible for all costs incurred by TMDP prior to such rejection and all costs of returning the Waste Material so rejected to Generator. Such costs shall include, but not be limited to, equipment or facility damage, remediation or corrective action, administrative and/or legal costs, as well as any fines and/or penalties. Acceptance of the Waste Material, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to TMDP in the event the Waste Material are later discovered to be non-conforming. Without limiting any other remedy available, Generator shall make prompt arrangements for the removal of the non-conforming Waste Material from TMDP's Facility to another lawful place of disposition. To the extent Generator delivers conforming Waste Material to TMDP but such conforming Waste Material becomes non-conforming Waste Material after such delivery, Generator shall not have any liability for, or

obligations to remove or remediate, any such non-conforming Waste Material as contemplated by this section; provided however, that the burden of proving that Waste Material was conforming at the time of delivery shall be on Generator.

7. Except as required by law, title to and ownership of the Waste Material shall at all times remain with Generator.

8. TMDP warrants and represents to Generator that:

8.1 TMDP is engaged in the business of and has developed the requisite expertise for providing Waste Services. All Waste Services provided by TMDP shall be performed utilizing the same standard of due diligence and reasonable care demonstrated by other companies within the industry providing similar Waste Services. All TMDP personnel, employees, agents, affiliates, subcontractors, and contractors engaged in providing the Waste Services shall be appropriately skilled and, where necessary, licensed to perform the work to which they are assigned; and,

8.2 Each facility, vehicle or any equipment in which TMDP provides Waste Services pursuant to these Terms and Conditions shall be in full compliance at all relevant times with all applicable environmental, health and safety legal requirements, including statutes, regulations, ordinances and common law; and,

8.3 TMDP will, and will ensure all persons referenced in Section 8.1 above who provide Waste Services for Generator hereunder will, provide Waste Services in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders, rules, regulations, and common law of the federal, state and local governments in whose jurisdictions such activities are performed; and,

8.4 No Waste Services will infringe any patent, trademark, copyright, trade secret or other intellectual property right owned or controlled by any other corporation, firm or person or other third party; and,

8.5 TMDP makes no other warranty, expressed or implied, other than as is specifically set forth above and none shall be implied. The warranties set forth above are exclusive and are given by TMDP and accepted by Generator in lieu of any and all other warranties, whether expressed or implied, all such warranties being hereby expressly disclaimed and waived by Generator.

9. Generator warrants and represents to TMDP that:

9.1 The description and specifications of the Waste Material in the Generator's waste profile document is or shall be true and correct in all material respects, that they fairly advises TMDP of the hazards and risks known by Generator to be incident to the Waste Services as requested by Generator and are otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local government in whose jurisdictions such Waste Material is to be tendered to TMDP; and

9.2 Generator will promptly disclose to TMDP any and all information known to Generator relating to the Waste Materials that presents or may present a hazard or risk to persons, property, the environment or the ecosystem whether such information is received or developed by Generator before or after delivery of the Waste Material to TMDP; and,

9.3 Generator will comply with all valid and applicable statutes, ordinances, orders, rules and regulations, of the federal, state and local governments in whose jurisdiction such Waste Material is to be tendered to TMDP, pertaining to Generator and the Waste Material; and,

9.4 Unless otherwise specified in writing, Generator has sole title to the Waste Material which will be tendered to TMDP, and is not under legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Material to TMDP; and,

9.5 Except as specifically set forth in the applicable waste profile document, the Waste Material delivered to TMDP shall be free of all toxic, radioactive or hazardous chemicals, compounds or organisms and all medical waste which, if present in any waste stream, would bring the waste stream under the regulatory classification of hazardous or toxic within the meaning of any Federal, state or local law or regulation or the rules, regulations or otherwise present an risk or hazard to persons, property, the environment or ecosystem. The provision of this representation and warranty shall survive, for all purposes, the acceptance of or the failure to reject the Waste Material by TMDP.

10. Indemnification Provisions

10.1 Each Party agrees to defend, indemnify and hold the other Party and their respective affiliates and subsidiaries, and the respective affiliates, directors, officers, partners, members, employees and agents, harmless from and against any and all claims, liabilities, suits, proceedings, judgments, orders, fines, penalties, damages, losses, costs and expenses (including, without limitation, costs of defense, settlement and reasonable attorneys' fees and expenses) (all of the foregoing herein collectively called "Liabilities, Proceedings and Damages"), arising out of (i) the indemnifying Party's active or passive negligence, gross negligence or willful misconduct; and/or, (ii) failure of the indemnifying Party or any of its employees or agents to observe or comply with any of the indemnifying Party's duties or obligations under these Terms and Conditions, including, without limiting the generality of the foregoing, any failure to observe or comply with any applicable federal, state or local laws, ordinances, codes, orders, rules or regulations; violation

or breach of the warranty provisions in these Terms and Conditions. The foregoing obligations of indemnity will include, but not be limited to, any and all Liabilities, Proceedings and Damages for or relating to (i) injury to or death of any person (including, without limitation, employees or agents of the Parties), (ii) damage to or loss or destruction of any property (including, without limitation, property of the Parties, or their respective employees or agents), and (iii) any spill, release or leak of any hazardous substance or waste or any contamination of, injury or damage to, environmental impairment of or adverse effect on persons, animals, aquatic and wild life, biota, vegetation, waters, other natural resources, or the environment. Provided, however, the indemnifying Party shall be liable only for that percentage of total Liabilities, Proceedings and Damages that corresponds to the indemnifying Party's percentage of total active or passive negligence, gross negligence, willful misconduct or other fault as herein described above as it is compared to that of the indemnified Party. TMDP shall be liable hereunder to the extent any Waste Services are performed by TDMP's affiliates, subcontractors, or contractors.

10.2 Neither Party shall have any liability to the other Party for any indirect, incidental, aggravated, exemplary, punitive, or consequential damages incurred by the other Party, whether brought on an action for breach of contract, breach of warranty, tort, strict liability, or otherwise and irrespective of whether caused or allegedly caused by either Party's negligence and none shall be awarded by any tribunal against a Party hereto in favor of a Party hereto; provided, however, that the limitations on liability contained in this Section 10.2 shall not apply to damages caused by gross negligence or willful misconduct or to damages which are part of a third Party claim for which a Party hereunder is claiming an indemnity obligation under these Terms and Conditions from the other Party and the Party entitled to indemnity protection under these Terms and Conditions is seeking an indemnity or other relief against the payment of such damages from the Party required to provide such indemnity or other relief.

10.3 Those provisions of these Terms and Conditions which by their nature are intended to survive the termination, cancellation, completion or expiration of these Terms and Conditions shall continue as valid and enforceable obligations of the Parties, notwithstanding any such termination, cancellation, completion or expiration. Such provisions include, but are not limited to, provisions concerning warranties and indemnifications.

11. Whenever entering onto a TMDP facility, any employee, common carrier or other agent or representative of Generator shall comply with all reasonable requirements of TMDP imposed for purposes of safety, indemnity and/or insurance protection. Generator shall be responsible for any and all demurrage charges arising from the transportation of Waste Material.

12. PAYMENT TERMS: Effective as of February 15, 2023, TMDP will not extend credit terms in any amount for Waste Services provided to Generator. Waste Materials shall only be received by TMDP and Waste Services shall only be provided by TMDP if the mutually agreeable estimated fees and other charges have been deposited in advance via Electronic Funds Transfer through the Automated Clearing House (EFT/ACH) or similar electronic transfer protocol to the following TMDP bank account or any other bank account TMDP establishes:

Bank Name: Investar Bank
Bank Telephone: 225/227-2332
Account Name: TM Deer Park Services Limited Partnership
Routing #: 065405459
Account #: 4004080909
Fedwire: 065405459
SWIFT Code: tibbus44 TIB Dallas

Subject to the first and last paragraphs of this Section 12, this deposit amount will be an estimate for the subsequent week of expected waste deliveries and reconciled on a weekly basis in order to determine the next deposit amount. The reconciliation will be based on actual trucks and volumes delivered and Waste material disposed of according to the appropriate rates listed on the Service and Pricing Agreement. These payment terms shall remain in effect until mutual agreement is reached as to alternative payment terms. Funds deposited in the above described account shall bear no interest and none shall be credited to Generator's account nor paid to Generator. Upon Notice from Generator to TMDP that Waste Services will no longer be required, the balance of Generator's deposit(s), if any, in the above described account shall be returned to Generator by TMDP within seven (7) business days.

The Parties acknowledge that (i) absent the deposits described above, Waste Material will not be received by TMDP nor will Waste Services be provided by TMDP and (ii) the transfer of monies by customer to the above described bank account is intended by the Parties to be a contemporaneous exchange for new value given to customer by TMDP's Waste Service. Nothing in this Section 12 shall be construed as a requirement that TMDP will either receive Waste Material from Generator or provide Waste Services to Generator even though Generator may have a positive balance in any amount in the deposit account.

13. All fees and charges for Waste Services as may be set forth in any quotation, bid, service and pricing agreement, work order or purchase order are exclusive of any and all federal, state or local sales, excise, value added, environmental and/or use taxes (or other similar taxes). Payment (or reimbursement) of any such tax shall be the responsibility of Generator.

14. Except with respect to payments that are due and payable, neither Party shall be considered in default in the performance of its obligations or be subject to any liability if such performance is prevented or delayed on account of causes beyond the reasonable control of the affected party, including without limitation, war, hostilities, revolution, civil commotion, strike, epidemic, rain, fire, wind,

earthquake, flood, major equipment failure, labor dispute or because of any law, order, regulation or ordinance of any government, or of any subdivision thereof, or because of an Act of God.

15. TMDP shall consider all information received from Generator to be confidential and shall not disclose any such information to any third party except as required by law or as Generator may request or otherwise permit.

16. If any section or clause of these Terms and Conditions shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of these Terms and Conditions as a whole or of any section, subsection, sentence or clause hereof not so adjudged. In the event of a conflict between these general terms and conditions and the Service and Pricing Agreement to which these terms are attached and incorporated, the provisions of the Service and Pricing Agreement shall control.

17. These Terms and Conditions may be changed, modified or terminated only by a writing signed by both Parties. Any prior verbal agreements or understandings between the Parties pertaining to the Waste Services covered hereby are hereby terminated and/or superseded by these Terms and Conditions. The waiver of a breach of any term or condition shall not be deemed to constitute the waiver of any other breach of the same or any other term or condition hereof.

18. These Terms and Conditions shall be governed by and construed in accordance with the laws of the State of Texas without reference to the choice of law doctrine of such state. Any suit brought by either Party against the other Party for claims arising out of these Terms and Conditions and/or the Waste Services shall be brought in the federal courts of Harris County, Texas (or the state courts of Harris County in the event that such court does not have or declines jurisdiction), and the Parties hereto consent to the exclusive jurisdiction of such courts in respect of such action or proceeding. In the event of any litigation between the Parties arising from the Waste Services or these Terms and Conditions, the prevailing Party shall be awarded its costs of suit, including reasonable attorney's fees, as determined by such courts.

19. The relationship of TMDP to Generator is that of an independent contractor.

20. The Service and Pricing Agreement may be executed in any number of counterparts, each of which will be deemed to be an original copy of such agreement, and all of which, when taken together, shall be deemed to constitute one and the same agreement. Signatures transmitted by facsimile or other electronic means shall be accepted as originals for all purposes.

21. PROVISIONS REGARDING PIPELINE FOR DELIVERY OF WASTE MATERIAL

21.1 The Parties shall jointly develop a pipeline between the adjoining properties for the purpose of delivering Waste Material from Generator to TMDP (the "Pipeline"). Generator shall be fully responsible for the design, engineering, procurement, construction, operation, maintenance and repair of that portion of the Pipeline located on Generator's side of the fenceline. TMDP shall be fully responsible for the design, engineering, procurement, construction, maintenance and repair of that portion of the Pipeline located on TMDP's side of the fenceline. Generator shall be fully responsible to engineer and complete the tie-in of the two separate pipelines notwithstanding the point of connection vis a vis the fenceline and/or property line.

21.2 Anything in these General Terms and Conditions to contrary notwithstanding, in the event that any portion of the pipeline is inoperable for any period of time for any cause whatsoever, including, without limitation, negligence, recklessness or willful neglect, thus requiring the Waste Material to be shipped by Generator to TMDP (or other waste disposal site) via tanker trucks or other alternative means of conveyance, both Parties waive recovery of any damages resulting from the Pipeline outage and hold the other Party harmless from any such damage(s).

21.3 Generator, or its representative, is required to inspect that portion of the waste pipeline, which starts within Generator's plant from the source tank(s) to the point that the pipeline crosses into TMDP's property. Such inspections shall be performed in accordance with Generator's ordinary pipeline leak and damage inspection practices. TMDP will be responsible for that portion of the Pipeline from its fenceline to the terminating tank(s) and will perform similar leak and damage inspections in accordance with its customary practices and policies and procedures. To the extent a Party has an inspection form (but, for the avoidance of doubt, such form is not required), it shall contain the following general language "For each unit, indicate pass or fail for the associated inspection criteria. Any failure noted during the inspection requires corrective action. If corrective action is required and can be immediately resolved, note the deficiency and the corrective action taken. If the corrective action cannot be immediately resolved, a remedial work order will be generated and noted." A Party's Pipeline inspection records shall be provided to the other Party as such Party may reasonably request. In addition, any deficiency or other work performed on the Pipeline, will require the Party identifying the failure to notify the other Party promptly. In the unlikely event of Pipeline failure resulting in a release of waste to the environment, the Party responsible for clean-up and any other corrective action shall be determined by the point of failure and where that point of failure is located (unless such point of failure is the result, in whole or in part by, the grossly negligence acts or omissions of the other Party) provided, however, in the event that the released Waste Material does not meet the waste profile and such excursion results in additional costs of remediation, such additional costs shall be the responsibility of Generator. Leak Detection and Response (LDAR) monitoring on the Pipeline is required in accordance with 40 CFR Subpart BB and shall be performed by each Party as to that portion of the Pipeline located on that Party's property. A Party's LDAR records shall be provided to the other Party as reasonably requested.

21.4 Prior to each transfer of Waste Materials from the source Generator tank to TMDP, Generator shall submit a completed and signed LDRN and sample of the source tank to TMDP. TMDP upon receipt of the Land Disposal Restrictions Notification (LDRN), will issue a workorder to record the characteristics of the sample and acknowledge that the sample conforms to the profile as required by TMDP's Waste Analysis Plan (WAP). Only upon receipt of the aforementioned workorder, Generator may begin to transfer the Waste

Material to TMDP's receiving tank. The transfer may be halted for any reason by either Party, including, but not limited to, a pipeline failure TMDP's receiving tank is reaching capacity; or, TMDP's sampling of the receiving tank indicates that the material is no longer conforming to the approved profile. Reasonable surcharges may apply or a rejection of the material may occur if the Waste Material received is found to be no longer conforming to the profile.

VI. COMPONENTS: Account for 100% of the waste components. Include metals, UHCs, TRI-reportable chemicals, etc.

CAS # (Optional)	Constituent	Range	Unit	CAS # (Optional)	Constituent	Range	Unit
	water	95 - 99	%		Ethylbenzene	0 - .009	ppm
	Vinyl chloride	0.022 - 0.290	ppm		Methylcyclohexane	0 - .002	ppm
	2-ethylhexyl Acrylate	0 - 0.1	%		Toluene	0 - .02	ppm
	butyl Acrylates	0 - 0.1	%		Xylene	.003 - .045	ppm
	Diethylene Glycol	0 - 0.1	%		2-Methylnaphthalene	0 - .024	ppm
	Lube oil	0 - 0.1	%		Acenaphthene	0 - .020	ppm
	MEK	0 - .052	ppm		Acenaphthylene	0 - .019	ppm
	MIBK	0 - .015	ppm		Anthracene	0 - .025	ppm
	Acetone	0 - 0.85	ppm		Benzo[a]anthracene	0 - .023	ppm
	Benzene	.0014 - .005	ppm		Chrysene	0 - .023	ppm

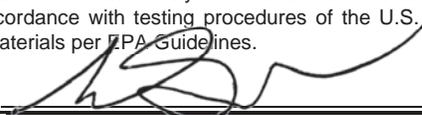
Specific constituents of concern: Check here if the following constituents do not apply to the waste described in this document.

79-06-1	Acrylamide	N/A -	7446-27-7	Lead phosphate	N/A -
309-00-02	Aldrin	N/A -	628-86-4	Mercury fulminate	N/A -
20859-73-8	Aluminum phosphide	N/A -	56-49-5	3-Methylcholanthrene	N/A -
7778-39-4	Arsenic acid	N/A -	79-46-9	2-Nitropropane	N/A -
1303-28-2	Arsenic pentoxide	N/A -	924-16-3	N-Nitrosodi-n-butylamine	N/A -
1327-53-3	Arsenic trioxide	N/A -	1116-54-7	N-Nitrosodiethanolamine	N/A -
92-87-5	Benzidine	N/A -	55-18-5	N-Nitrosodiethylamine	N/A -
98-07-7	Benzotrichloride	N/A -	62-75-9	N-Nitrosodimethylamine	N/A -
31984-6	alpha-BHC	N/A -	10595-95-6	N-Nitrosomethylethylamine	N/A -
319-85-7	beta-BHC	N/A -	684-93-5	N-Nitroso-N-methylurea	N/A -
107-30-2	Chloromethylmethyl ether	N/A -	930-55-2	N-Nitrosopyrrolidine	N/A -
111-44-4	sym-Dichloroethyl ether	N/A -	7803-51-2	Phosphine	N/A -
542-88-1	sym-Dichloromethyl ether	N/A -	50-55-2	Reserpine	N/A -
60-57-1	Dieldrin	N/A -	1314-80-3	Sulphur phosphide	N/A -
56-53-1	Diethylstilbesterol	N/A -	78-00-2	Tetraethyl lead	N/A -
122-66-7	1,2-Diphenylhydrazine	N/A -	1314-32-5	Thallic oxide	N/A -
621-64-7	Di-n-propylnitrosamine	N/A -	6533-73-9	Thallium carbonate	N/A -
	Dioxins	N/A -	7791-12-0	Thallium chloride	N/A -
298-04-4	Disulfoton	N/A -	10102-45-1	Thallium nitrate	N/A -
115-29-7	Endosulfan	N/A -	12039-52-0	Thallium selenite	N/A -
33213-6-5	Endosulfan II	N/A -	7446-18-6	Thallium sulfate	N/A -
	Endrin metabolites	N/A -	62-56-6	Thiourea	N/A -
106-93-4	Ethylene dibromide	N/A -	137-26-8	Thiram	N/A -
76-44-8	Heptachlor	N/A -	99-35-4	1,3,5-Trinitrobenzene	N/A -
302-01-2	Hydrazine	N/A -	1314-84-7	Zinc phosphide	N/A -
7439-92-1	Lead	0 - 0.0031			

Waste characterization determined by: Process Knowledge Waste Analysis (Provide copy) MSDS/SDS(s) (Provide copy)

VII. Certification

I hereby certify and warrant that the information supplied on this form, and any attachments, represents a complete and accurate identification and description of this waste material, its constituents and its known or suspected hazards. I further certify and warrant that this information is the result of an analysis of a representative sample of the waste obtained and analyzed in accordance with testing procedures of the U.S. Environmental Protection Agency or by the application of knowledge of the process generating the waste materials per EPA Guidelines.

PRINTED NAME: Robert J. Scoble, Mgr Env Ops SIGNATURE:  DATE: 2/14/23

 **TM Deer Park Services Limited Partnership**

TMDP Profile/WS# : _____

P.O. Box 1914 • 2525 Independence Parkway South • Deer Park, TX 77536-1914 • Phone: 281/930-2525 • Fax: 281/930-2535

VI. CONTINUED COMPONENTS: Account for 100% of the waste components. Include metals, UHCs, TRI-reportable chemicals, etc.

CAS # (Optional)	Constituent	Range	Unit	CAS # (Optional)	Constituent	Range	Unit
	Total Suspended Sediment	28	11,000 ppm				
	Diesel Range Organics	5.6	2300 ppm				
	Sediment (settled)	0	2 %				
	Total Organic Carbon	0	7000 ppm				
	LNAPL (oil, glycol, acrylate)	0	0.1 %				
	Arsenic	0	.024 ppm				
	Barium	0.022	0.078 ppm				
	Chromium	0	0.058 ppm				
	Selenium	0	0.018 ppm				
	Isopropylbenzene	0	.003 ppm				
	Cadmium	0	0.0003 ppm				
	Styrene	0	.005 ppm				
	AFFF Thunderstorm	0	.02 % <input type="text"/>				
	Naphthalene	0	0.04 ppm				
	Fluoranthene	0	0.082 ppm				
	Fluorene	0	0.023 ppm				
	Phenanthrene	0	0.1 ppm				
	Pyrene	0	.084 ppm				

SEE Attached Analytical Report: 240-180173, Sample IDs: WC-02/2023-02-09, WC-04/2023-02-09, WC-05/2023-02-09
 NOTE: WC-02 = Tank 505E, WC-04= Tank 514E, WC-05= Tank 566E

PROCESS OF GENERATION: Derailment involving 5 railcars of unused commercial grade vinyl chloride (VC). Derailment also involved releases of butyl acrylate, ethyl hexyl acrylate, 2-butoxyethyl acetate, ethylene glycol monobutyl ether acetate, lube oil, and isobutylene. Waste stream is water generated from interceptor trenches, dams & surface puddles and may contain any/all of the released products (SDS attached). Based on gauging data waste stream contains < 0.02" of LNAPL. Waste determination based on generator knowledge of chemicals released, concentrations of VC & Flashpoint in other frac tanks. During response ~ 40 gal PFAS containing AFFF was used. During first week of response activities 200K gallons of water was generated (40 gal AFFF/200K gal water = 0.02% AFFF)



Vickery Environmental, Inc.
 3956 State Route 412
 Vickery, Ohio 43464



Confirmation Letter

Tuesday, February 14, 2023

Page 1 of 2

We are pleased to confirm Vickery Environmental, Inc's approval of your waste material as described below. The attached profile for the waste materials was prepared by VEI based upon information provided by you. It is important that no changes be made to the profile without VEI's consent. If the profile meets with your approval, please email Vickeryscheduling@wm.com or call 419/547-7791 to schedule shipment of your waste materials.

Contact Person:	JOSH LINDLEY
Customer Name:	SPECIALIZED PROFESSIONAL SVCS
Profile Number:	OH895850
Waste Name:	WATER IMPACTED WITH VINYL CHLORIDE
Expiration Date:	12/31/2023
Quote Number:	4904
Quote Date:	2/14/2023

ALL PRICING BELOW IS GOOD THROUGH 12/31/22 OR WITH 30 DAYS WRITTEN NOTICE

Approved Mgmt. Facility:	Vickery Environmental, Inc.
Additional Information:	All loads must be pre-scheduled at least 24 hours in advance, through Vickery Environmental scheduling at Vickeryscheduling@wm.com or call (419) 547-7791.

Vickery receiving hours are as follows:

Monday through Friday, 7:00 am. to 4:00 pm.
 Closed Saturday, Sunday and Holidays except in cases of emergency.

Material must conform to site acceptance criteria:

- Oil <5%
- VOC's <5%
- Flashpoint >212 F
- PCB's <25 ppm non-TSCA
- Cyanide <250 ppm reactive
- Sulfide <500 ppm reactive
- Non-Infectious and Non-Radioactive , no TENORM
- No fuming material
- Liquid/pumpable and compatible with process

Tuesday, February 14, 2023

Page 2 of 2

A Land Disposal Notification and Certification Form must accompany each shipment for all EPA regulated hazardous waste.

All unpaid invoices over 30 days old, may be assessed a finance charge at the rate of 1.5% per month or per Contract.

Applicable state and local taxes are not included in these disposal prices. All wastes are priced as profiled, invoiced as actually received. Invoices shall be paid no later than thirty (30) days from the date of receipt. All terms are governed by the Agreement previously executed between our companies. The prices quoted above are subject to change by VEI upon thirty (30) days' prior written notice to you unless otherwise specifically provided or per the terms of our Agreement.

If you have any questions or would like to make changes to the profile, please contact your representative. Thank you for this opportunity to be of service.

CAROLYN GOLAMB
Vickery Environmental, Inc.



Requested Facility: Vickery Deepwell (Hazardous Waste Facility) Unsure Profile Number: OH895850
 Multiple Generator Locations (Attach Locations) Request Certificate of Disposal Renewal? Original Profile Number: _____

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

- 1. Generator Name: Norfolk Southern Railway Co
2. Generator Site Address: MP PC49 RAILROAD TRACKS NE OF N (City, State, ZIP) East Palestine OH 44413
3. County: Columbiana
4. Contact Name: Scott Deutsch
5. Email: scott.deutsch@nscorp.com
6. Phone: (412) 893-5640 7. Fax:
8. Generator EPA ID: OHR000221457 N/A
9. State ID: N/A

B. BILLING INFORMATION

SAME AS GENERATOR

- 1. Billing Name: Specialized Professional Services Inc
2. Billing Address: 300 Commercial Drive (City, State, ZIP) Washington PA 15301
3. Contact Name: Josh Lindley
4. Email: lindley@callspsi.com
5. Phone: (724) 579-8700 6. Fax:
7. WM Hauled? Yes No
8. P.O. Number:
9. Payment Method: Credit Account Cash Credit Card

C. MATERIAL INFORMATION

- 1. Common Name: Water Impacted with Vinyl Chloride
Describe Process(es) Generating Material: See Attached
Train derailment involving 5 railcars of unused commercial grade Vinyl Chloride (VC). Derailment also involved releases of Butyl Acrylate, Ethylhexyl Acrylate, 2-Butoxyethyl Acetate, Ethylene Glycol Monobutyl Ether Acetate, Lube Oil, and
2. Material Composition and Contaminants: See Attached
Table with 2 columns: Contaminant, Concentration
3. State Waste Codes: N/A
4. Color: clear to brown
5. Physical State at 70°F: Solid Liquid Other:
6. Free Liquid Range Percentage: 95 to 100 N/A
7. pH: 3 to 10 N/A
8. Strong Odor: Yes No Describe:
9. Flash Point: <140°F 140°-199°F ≥200° N/A

D. REGULATORY INFORMATION

- 1. EPA Hazardous Waste? Yes* No Code: U043
2. State Hazardous Waste? Yes No Code:
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? Yes* No
4. Contains Underlying Hazardous Constituents? Yes* No
5. From an industry regulated under Benzene NESHAP? Yes* No
6. Facility remediation subject to 40 CFR 63 GGGGG? Yes* No
7. CERCLA or State-mandated clean-up? Yes* No
8. NRC or State-regulated radioactive or NORM waste? Yes* No
*If Yes, see Addendum (page 2) for additional questions and space.
9. Contains PCBs? → If Yes, answer a, b and c. Yes No
a. Regulated by 40 CFR 761? Yes No
b. Remediation under 40 CFR 761.61 (a)? Yes No
c. Were PCB imported into the US? Yes No
10. Regulated and/or Untreated Medical/Infectious Waste? Yes No
11. Contains Asbestos? Yes No
→ If Yes: Non-Friable Non-Friable - Regulated Friable

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

- 1. Analytical attached Yes
Please identify applicable samples and/or lab reports:
Report 240-180173, Sample IDs WC-02/2023-02-09, WC-04/2023-02-09, WV-052023-02-09 NOTE WC-02=Tank 505E, WV-04=Tank 514E, WC-05=Tank 566E
2. Other information attached (such as MSDS)? Yes

F. SHIPPING AND DOT INFORMATION

- 1. One-Time Event Repeat Event/Ongoing Business
2. Estimated Quantity/Unit of Measure: 2,800,000
 Tons Yards Drums Gallons Other:
3. Container Type and Size: highway trailer
4. USDOT Proper Shipping Name: N/A
RQ, NA3082, HAZARDOUS WASTE LIQUID, N.O.S., 9, PG III, Vinyl Chloride

G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 - Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

- I am an Authorized Agent signing on behalf of the Generator, and I have confirmed with the Generator that information contained in this profile, as well as supporting documents provided, are accurate and complete.
Name (Print): Robert Scoble Date: 02/13/2023
Title: Environmental Manager
Company: Norfolk Southern Railway Company

Certification Signature
Robert Scoble



Only complete this Addendum if prompted by responses on EZ Profile™ (page 1) or to provide additional information. Sections and question numbers correspond to EZ Profile™.

Profile Number: OH895850

C. MATERIAL INFORMATION

Describe Process Generating Material (Continued from page 1): _____ If more space is needed, please attach additional pages.

Isobutylene. Waste stream is water generated from interceptor trenches, dams, & surface puddles and may contain any/all of the released products. Waste determination based on generator knowledge of chemicals released, concentrations of VC&Flashpoint in other frank tanks. During response, approximately 40 gallons of PFAS containing AFFF was used (Approximately 0.02 % AFFF)

Material Composition and Contaminants (Continued from page 1): _____ If more space is needed, please attach additional pages.

5.	
6.	
7.	
8.	
9.	
Total composition must be equal to or greater than 100%	
	≥100%

D. REGULATORY INFORMATION

Only questions with a "Yes" response in Section D on the EZ Profile™ form (page 1) need to be answered here.

1. EPA Hazardous Waste

a. Please list all USEPA listed and characteristic waste code numbers:

- b. Is the material subject to the Alternative Debris standards (40 CFR 268.45)? Yes No
 - c. Is the material subject to the Alternative Soil standards (40 CFR 268.49)? → If Yes, complete question 4. Yes No
 - d. Is the material exempt from Subpart CC Controls (40 CFR 264.1083)? Yes No
- If Yes, please check **one** of the following:
- Waste meets LDR or treatment exemptions for organics (40 CFR 264.1082(c)(2) or (c)(4))
 - Waste contains VOCs that average <500 ppmw (CFR 264.1082(c)(1)) – will require annual update.

2. State Hazardous Waste → Please list all state waste codes: _____

3. For material that is Treated, Delisted, or Excluded → Please indicate the category, below:

- Delisted Hazardous Waste Excluded Waste under 40 CFR 261.4 → Specify Exclusion: _____
- Treated Hazardous Waste Debris Treated Characteristic Hazardous Waste → If checked, complete question 4.

4. Underlying Hazardous Constituents → Please list all Underlying Hazardous Constituents:

5. Industries regulated under Benzene NESHAP include petroleum refineries, chemical manufacturing plants, coke by-product recovery plants, and TSDFs.

- a. Are you a TSDF? → If yes, please complete Benzene NESHAP questionnaire. If not, continue. Yes No
 - b. Does this material contain benzene? Yes No
 - 1. If yes, what is the flow weighted average concentration? _____ ppmw
 - c. What is your facility's current total annual benzene quantity in Megagrams? <1 Mg 1–9.99 Mg ≥10 Mg
 - d. Is this waste soil from a remediation? Yes No
 - 1. If yes, what is the benzene concentration in remediation waste? _____ ppmw
 - e. Does the waste contain >10% water/moisture? Yes No
 - f. Has material been treated to remove 99% of the benzene or to achieve <10 ppmw? Yes No
 - g. Is material exempt from controls in accordance with 40 CFR 61.342? Yes No
- If yes, specify exemption: _____

h. Based on your knowledge of your waste and the BWON regulations, do you believe that this waste stream is subject to treatment and control requirements at an off-site TSDF? Yes No

6. 40 CFR 63 GGGGG → Does the material contain <500 ppmw VOHAPs at the point of determination? Yes No

7. CERCLA or State-Mandated clean up → Please submit the Record of Decision or other documentation with process information to assist others in the evaluation for proper disposal. A "Determination of Acceptability" may be needed for CERCLA wastes not going to a CERCLA approved facility.

8. NRC or state regulated radioactive or NORM Waste → Please identify Isotopes and pCi/g: _____



Additional Profile Information

Profile Number: OH895850

C. MATERIAL INFORMATION

Material Composition and Contaminants (Continued from page 2):

If more space is needed, please attach additional pages.

10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	
31.	
32.	
33.	
34.	
35.	
36.	
37.	
38.	
39.	
40.	
Total composition must be equal to or greater than 100%	
	≥100%

D. REGULATORY INFORMATION

1. EPA Hazardous Waste

a. Please list all USEPA listed and characteristic waste code numbers (Continued from page 2):

2. Form Code:

3. Source Code:



LAND DISPOSAL RESTRICTION (LDR) NOTIFICATION AND CERTIFICATION FORM (PHASE IV)

Generator Name: Norfolk Southern Railway Co

Profile Number: OH895850

Manifest Number: _____

Ref. #	2. US EPA HAZARDOUS WASTE CODE(S)	3. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION (If not applicable, simply check NONE)		4. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1.	U043	N/A	<input checked="" type="checkbox"/>	A
2.			<input type="checkbox"/>	
3.			<input type="checkbox"/>	
4.			<input type="checkbox"/>	

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-Wastewater Wastewater
For hazardous debris meeting the definition of debris and subject to the alternate treatment standards in 268.45, check here:
- In **column 2**, identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261.
• To list additional waste code(s) use Land Disposal Notification/Certification Supplemental Form (CWM-2005-D) and check here:
- In **column 3**, for each waste code, identify the subcategory if one applies, or check NONE if the waste code has no subcategory.
- In **column 4**, enter the letter from the list below (A. – D.) that describes how the waste must be managed to comply with the land disposal restriction regulations in 40 CFR 268. Please note that if you enter B.1, B.3, B.6 or D, you are certifying that the waste meets all the Land Disposal Restrictions and may be landfilled without further treatment. If you enter B.4, you are certifying that the waste has been decharacterized, but still requires treatment for UHCs. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed on this form. Where these regulatory citations differ, your form will be deemed to refer to those state citations as well as 40 CFR.)
- Constituents of concern for waste codes F001-F005 and F039 and underlying hazardous constituents (UHCs) for D001-D043, must be identified unless the treatment facility will monitor for all constituents. **If any of these codes apply, check appropriate box below:**
• To identify constituents of concern for F001-F005, F039 and UHCs, use the Identification of Constituents of Concern Form (CWM-2007) and check here:
• If UHCs are applicable, but none are present at the point of generation, check here:
• If incineration facility will monitor for all constituents of concern (except dioxins), check here:

MANAGEMENT METHODS

A RESTRICTED WASTE REQUIRES TREATMENT

This waste must be treated to the applicable treatment standards set forth in 40 CFR 268.40.

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

"I certify under penalty of law that I personally have examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process had been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification including the possibility of fine and imprisonment."

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the non-wastewater organic constituents have been treated by combustion units as specified in 268.42 Table 1. I have been unable to detect the non-wastewater organic constituents despite having used best faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.6 RESTRICTED DEBRIS TREATED TO ALTERNATE PERFORMANCE STANDARDS

"I certify under penalty of law that the debris has been treated in accordance with the requirements of 40CFR 268.45. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column (4) above.

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

"I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and LAC 33: V. 2223-2233. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

I hereby certify that all information submitted in this and all associated documents is complete and accurate to the best of my knowledge and information.

Name: (Print) Robert Scoble

Title: Environmental Manager

Signature: Robert Scoble

Date: 02/13/2023

Appendix C

Transportation Management Plan

Ex.7F -Homeland Security and Ex.9 -Wells



Legend

<ul style="list-style-type: none"> Completed Monitoring Well Proposed Monitoring Well VC Detection Sample Location Excavated Sample Locations (0-2 ft bgs) Stormwater Catch Basin 	<ul style="list-style-type: none"> Monitoring Location Containment Feature Ditch Drain Tile Perennial stream Intermittent stream 	<ul style="list-style-type: none"> Pipe Expanded Waste Staging Areas Water Bypass Aeration Zones <all other values> 	<ul style="list-style-type: none"> PEM: Palustrine Emergent Wetland PSS: Palustrine Scrub-Shrub Wetland PFD: Palustrine Forested Wetland Previously Existing Concrete Dam/Spillway Engineered Check Dam Temporary Dam 	<ul style="list-style-type: none"> Culvert Pipe Waste Staging Standby Tank Areas Roll Off Staging Area South Ditch Basin 	<ul style="list-style-type: none"> Burn Pit Waste Manifesting Trailer Tank Farm VC (Area 1) Buy/ Solidification/Excavation Area 3 	<ul style="list-style-type: none"> Car Scrapping Beer Cars North Ditch South Ditch 1 Mile Radius from Incident Location County Boundary 	<ul style="list-style-type: none"> Aeration Zones Expanded Waste Staging Areas Truck Routes - Primary Truck Routes - Options
---	--	--	---	--	---	---	--

DRAFT
 Attorney-Client Privilege/Attorney Work Product/
 Prepared at the Direction of Counsel

Map Date: 4/1/2023
 Drone imagery offsite date: 03/26/2023
 Drone imagery onsite date: 03/30/2023

NORFOLK SOUTHERN
 EAST PALESTINE, OHIO

**ONSITE MOVEMENT TO TANK FARM
 STORAGE AREAS**

FIGURE
1

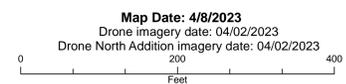
Exemption 7F- Homeland Security



Legend

- | | | | | |
|-----------------------------------|---------------------------|---------------------------------|------------------------------|---------------------------------|
| Incident Location | Waste Staging | Tank Farm | North Ditch | Trucks Exiting |
| Right-Of-Way Excavation Footprint | Standby Tank Areas | VC (Area 1) | South Ditch | Truck Scale and Tarping Station |
| Stormwater Catch Basin | Roll Off Staging Area | Bury/ Solidification/Excavation | County/State Boundary | Truck Staging |
| Containment Feature | South Ditch Basin | Area 3 | Expanded Waste Staging Areas | Truck Wash |
| Water Bypass | Burn Pit | Car Scrapping | Tarping Station | |
| Stormwater Treatment Area | Waste Manifesting Trailer | Beer Cars | Trucks Entering | |

DRAFT
Attorney-Client Privilege/Attorney Work Product/
Prepared at the Direction of Counsel



NORFOLK SOUTHERN
EAST PALESTINE, OHIO

**ONSITE ROUTE FOR LOADING
OFFSITE DISPOSAL - SOIL**

FIGURE
2

Exemption 7F- Homeland Security

Document Path: T:\EN\NorfolkSouthernEastPalestine_Feb_2023\MDP\RightPhotos_Daily\NS_EastPalestine_F3_OnsiteRouteForLoadingOffSite_Disposal - Water.mxd



Legend

- Waste Manifesting Trailer
- Tank Farm
- Trucks Entering
- Trucks Exiting
- Truck Staging
- Truck Wash

Attorney-Client Privilege/Attorney Work Product/
Prepared at the Direction of Counsel

DRAFT

Map Date: 4/8/2023
Onsite drone imagery date: 03/18/2023
Offsite drone imagery date: 03/16/2023

NORFOLK SOUTHERN EAST PALESTINE, OHIO	
ONSITE ROUTE FOR LOADING OFFSITE DISPOSAL - WATER	
	FIGURE 3



A State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413

B Clean Harbors Inc, 108555 E US Highway 36, Deer Trail, CO 80105

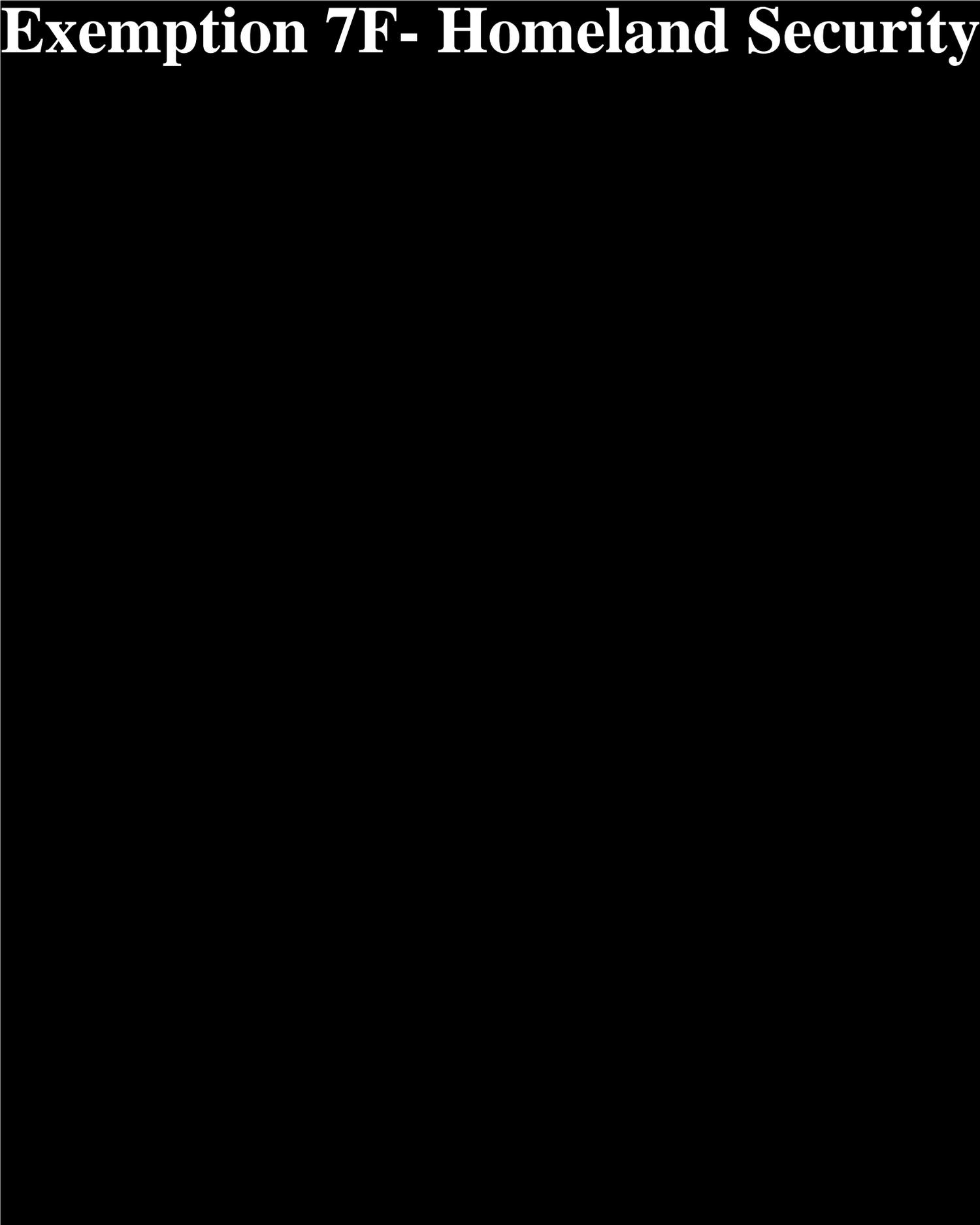
Exemption 7F- Homeland Security



A State Line Tavern

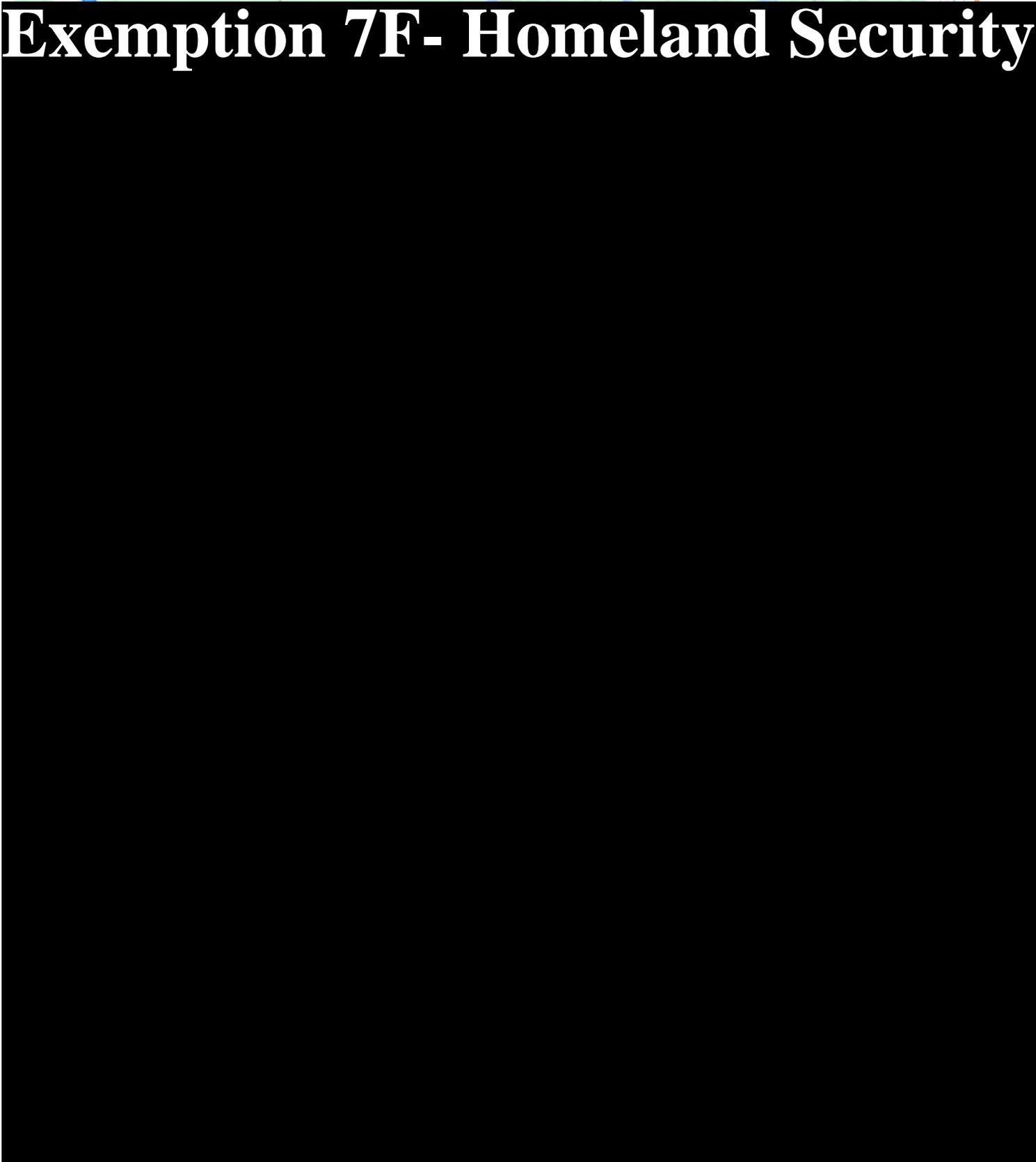
Exemption 7F- Homeland Security

Exemption 7F- Homeland Security



B Clean Harbors Inc

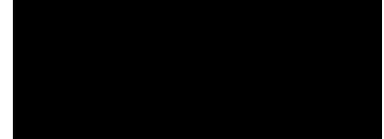
Exemption 7F- Homeland Security





- A** State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413
- B** Heritage Environmental Services, 1250 Saint George St, East Liverpool, OH 43920

Exemption 7F- Homeland Security



- A** State Line Tavern

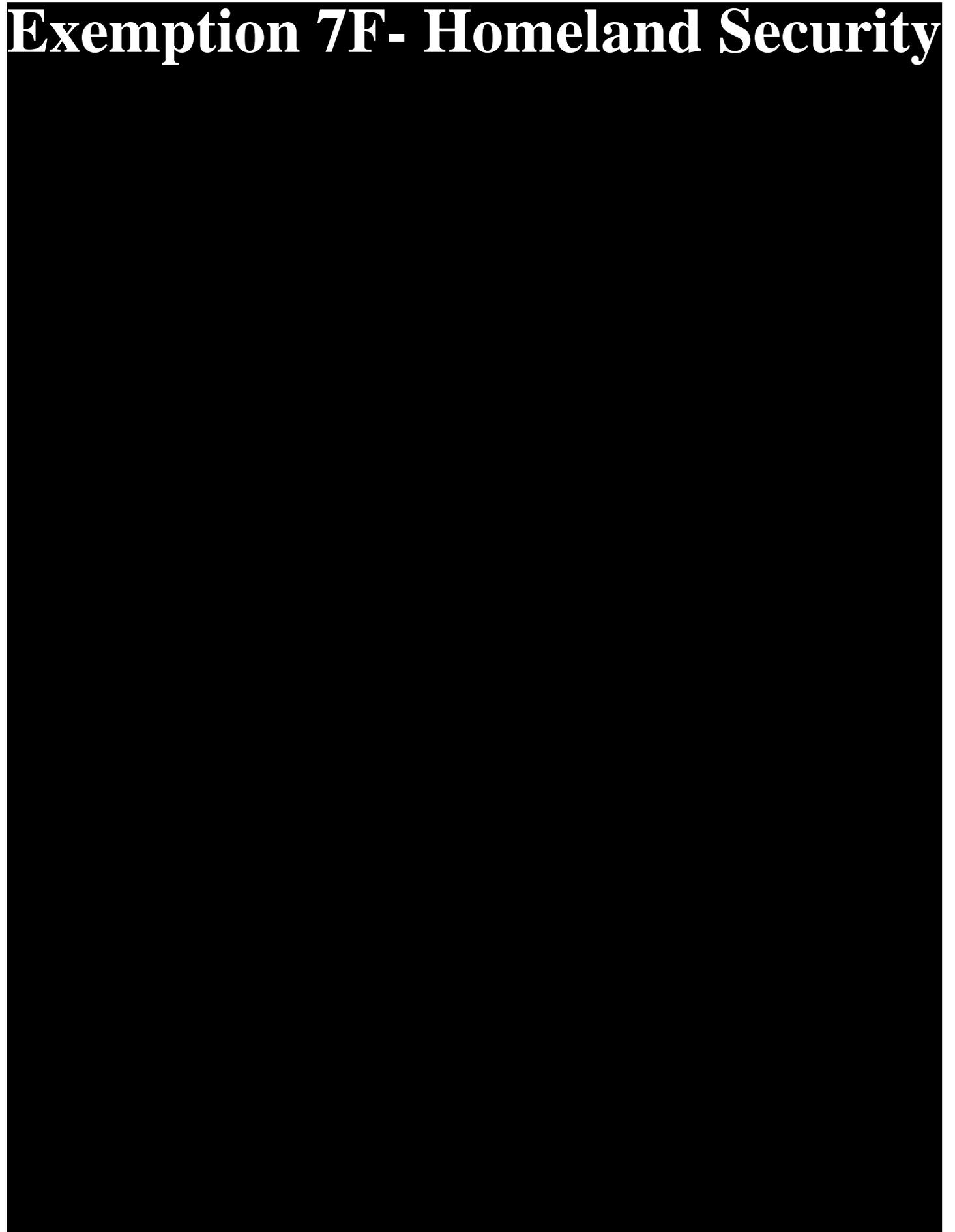


Exemption 7F- Homeland Security



- B** Heritage Environmental Services

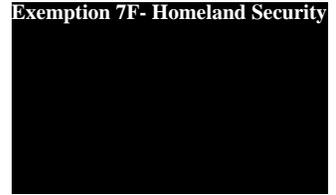
Exemption 7F- Homeland Security





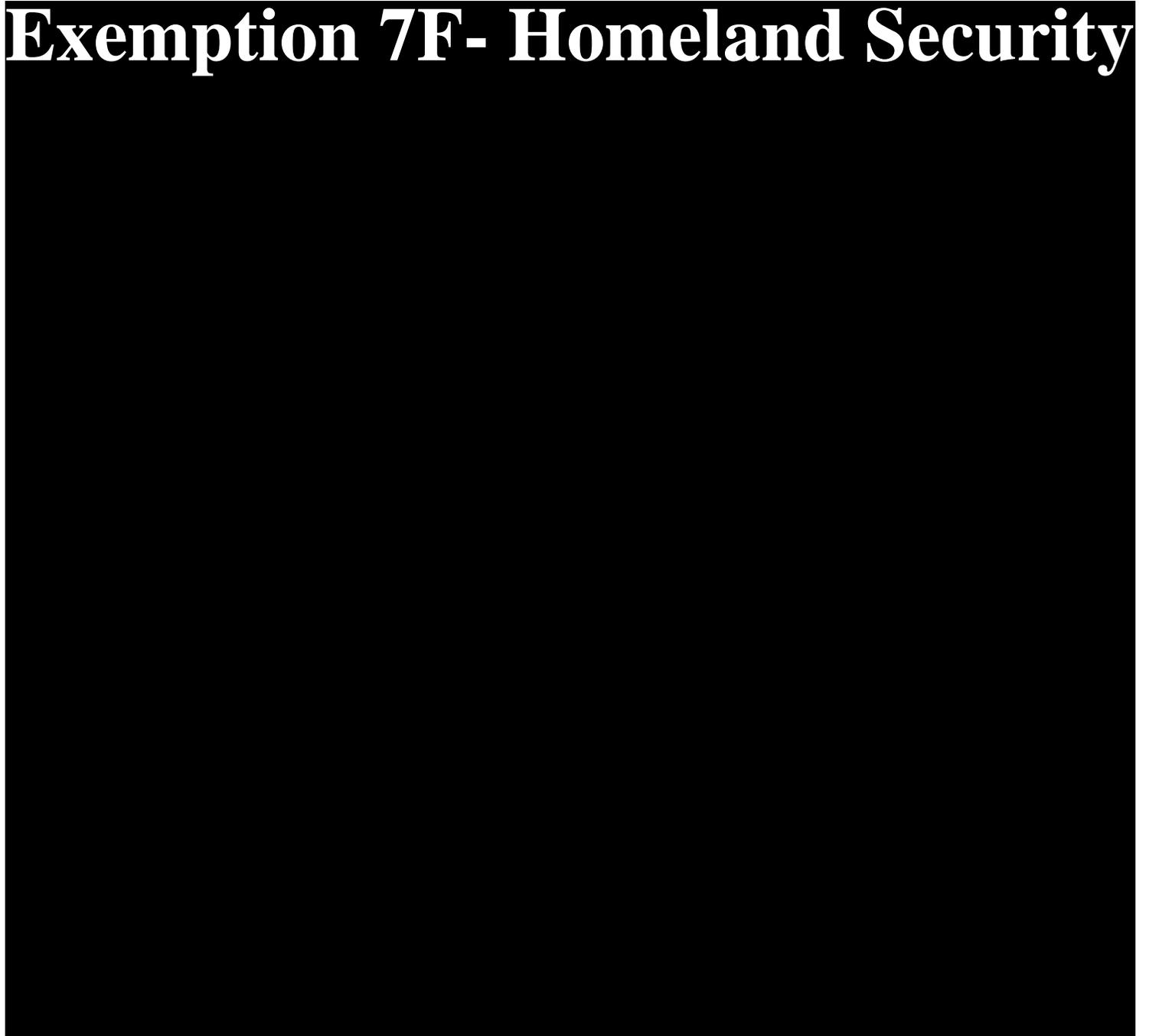
- A** State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413
- B** 4370 W County Road 1275 N, Roachdale, IN 46172

Exemption 7F- Homeland Security

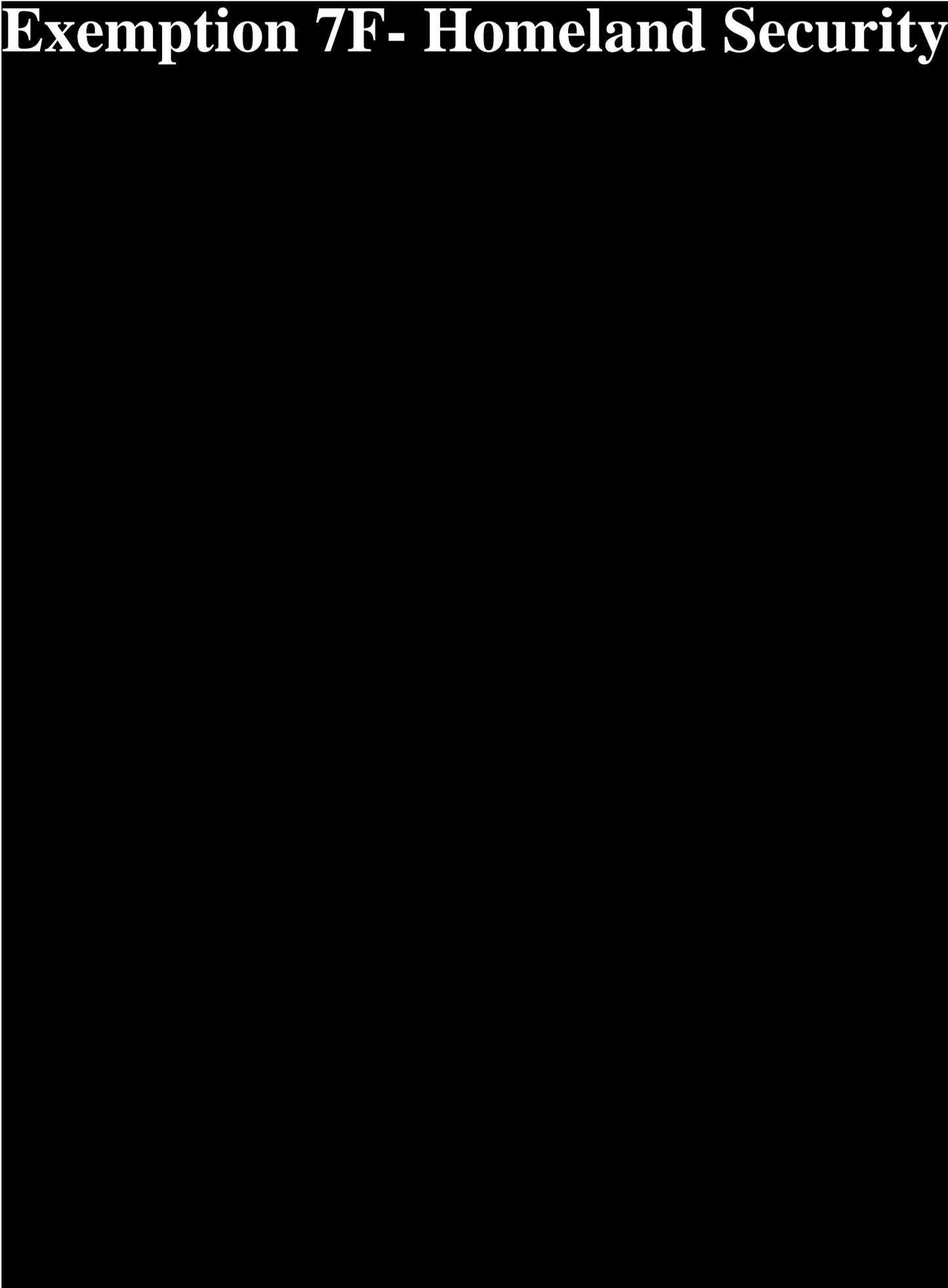


- A** State Line Tavern

Exemption 7F- Homeland Security

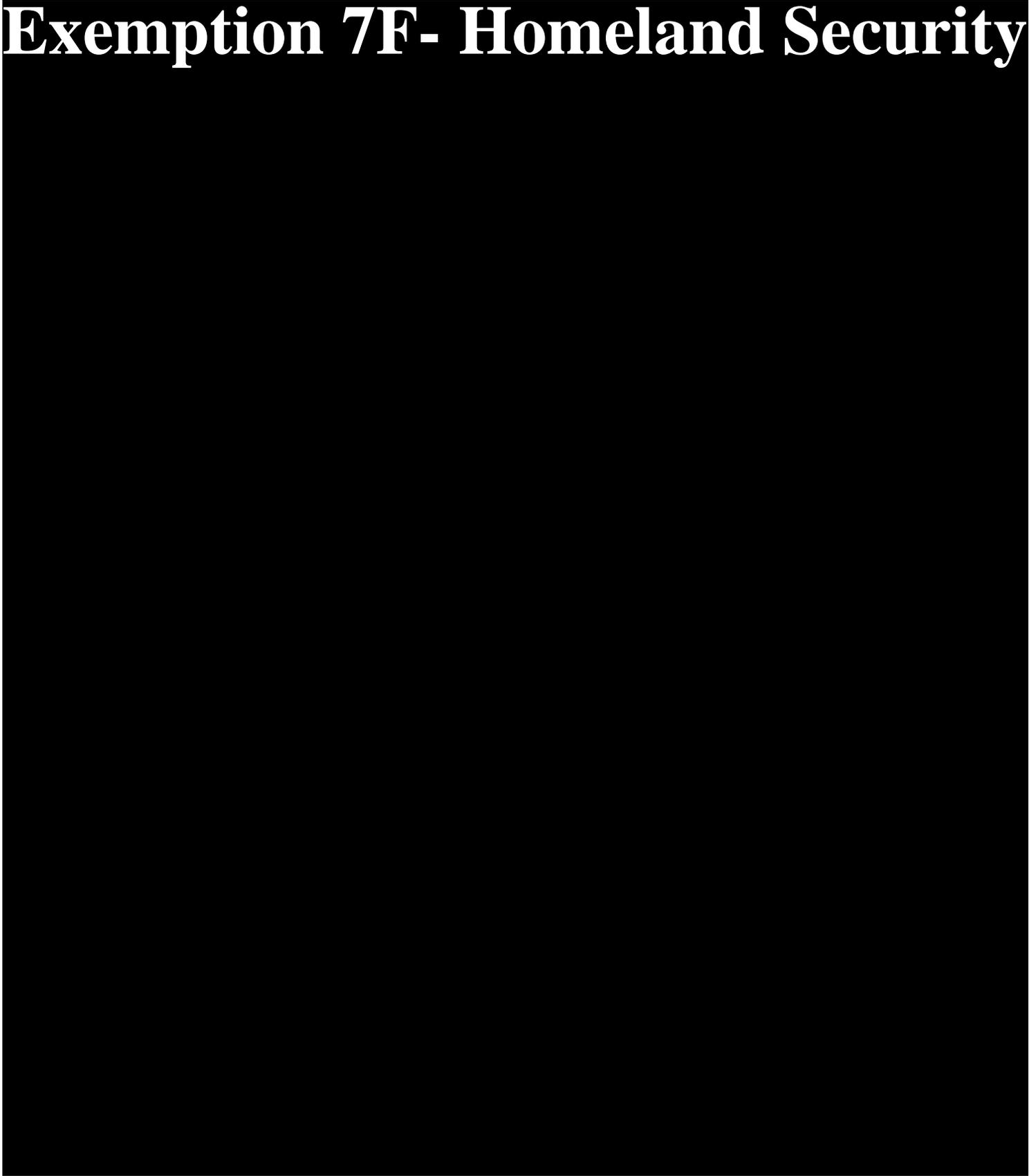


Exemption 7F- Homeland Security



Exemption 7F- Homeland Security

Exemption 7F- Homeland Security



Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2023 TomTom.



Exemption 7F- Homeland Security

A State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413

B Ross Incineration Services Inc, 36790 Giles Rd, Grafton, OH 44044



A State Line Tavern

Exemption 7F- Homeland Security

Exemption 7F- Homeland Security

B Ross Incineration Services Inc

Exemption 7F- Homeland Security

These directions are subject to the Microsoft® Service Agreement and are for informational purposes only. No guarantee is made regarding their completeness or accuracy. Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2023 TomTom.



Exemption 7F- Homeland Security

A State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413

B Norfolk Southern, 5300 Greenhurst Dr, Maple Heights, OH 44137



A State Line Tavern

Exemption 7F- Homeland Security

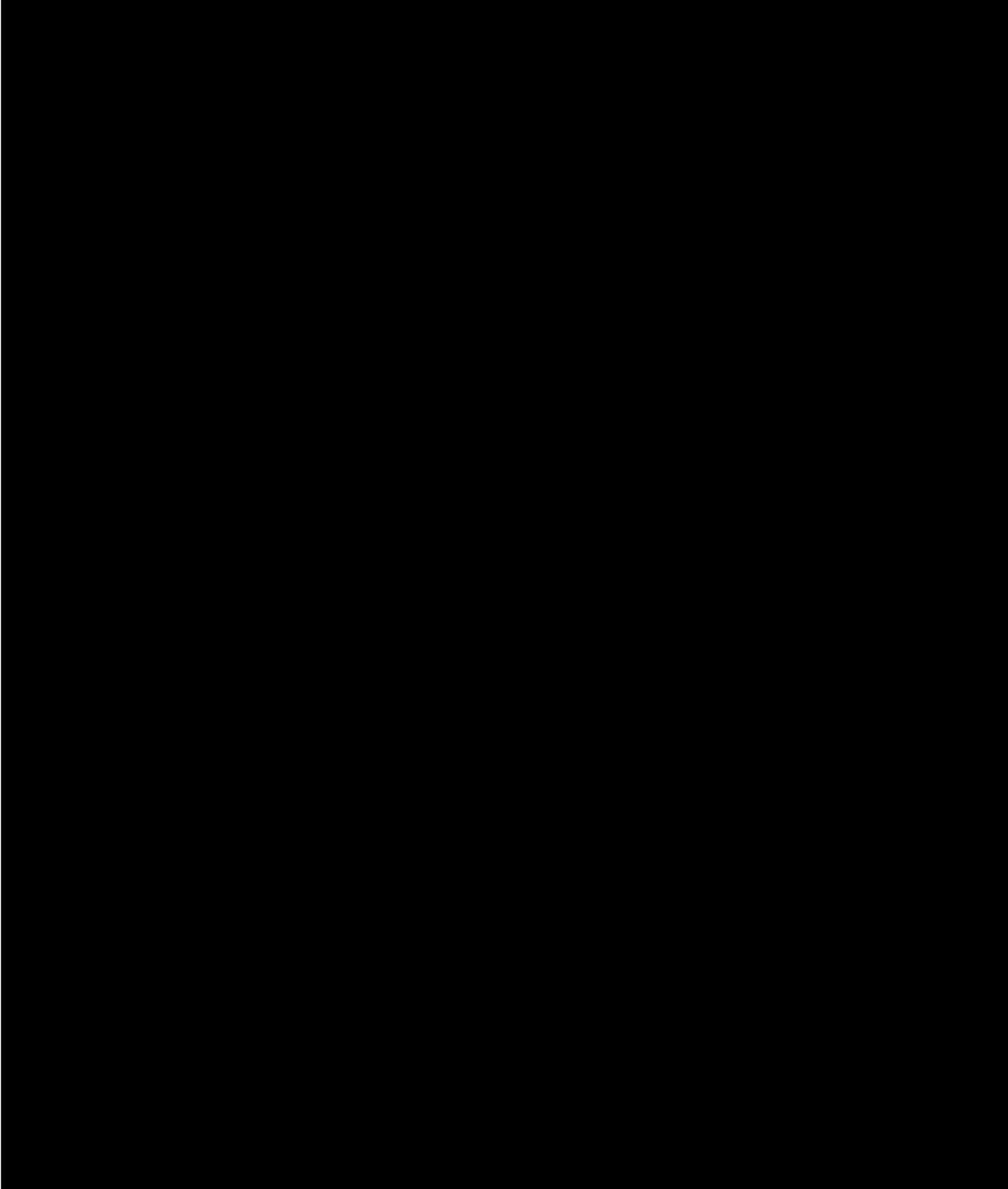
Exemption 7F- Homeland Security



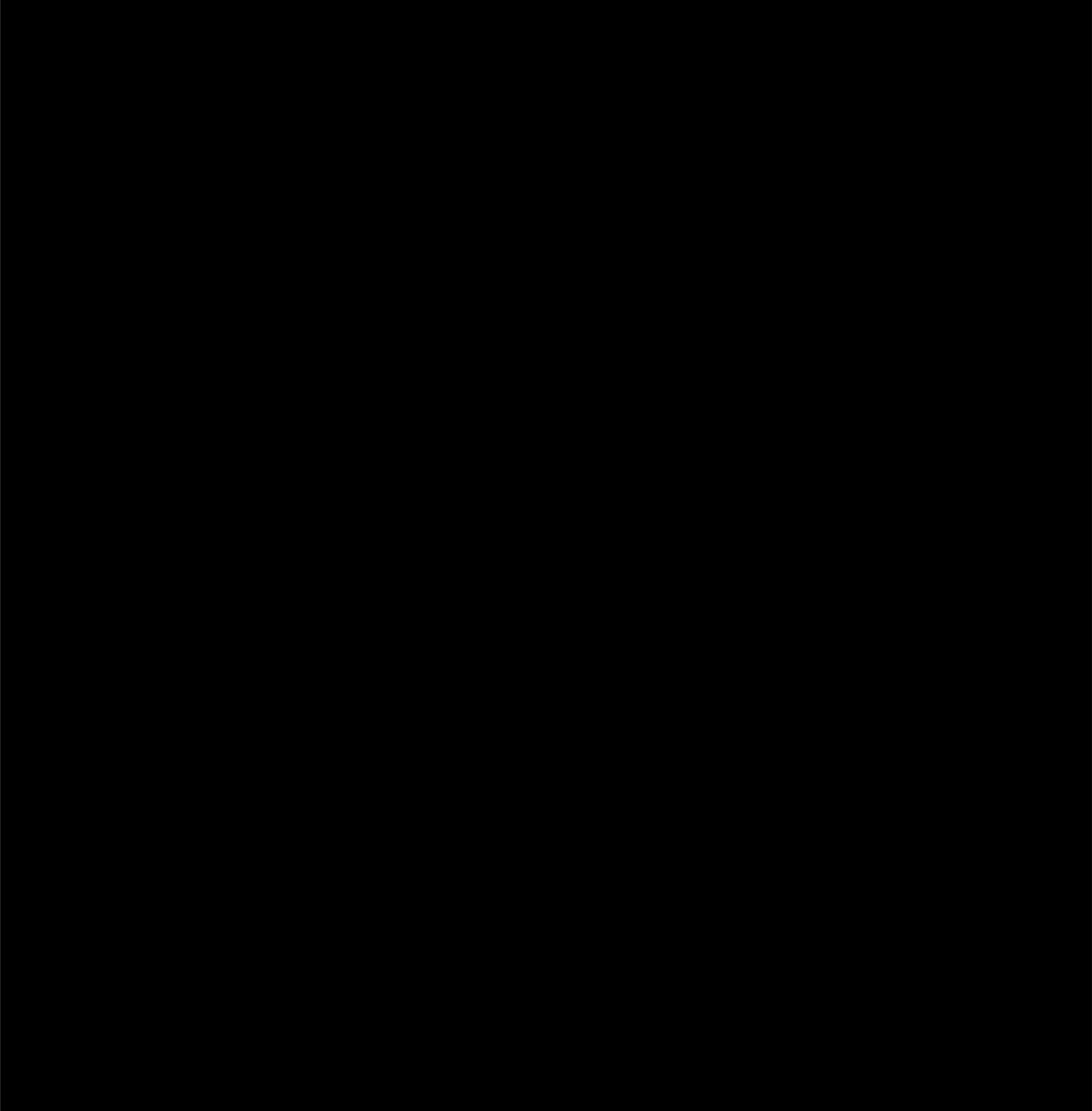
B Norfolk Southern

Exemption 7F- Homeland Security

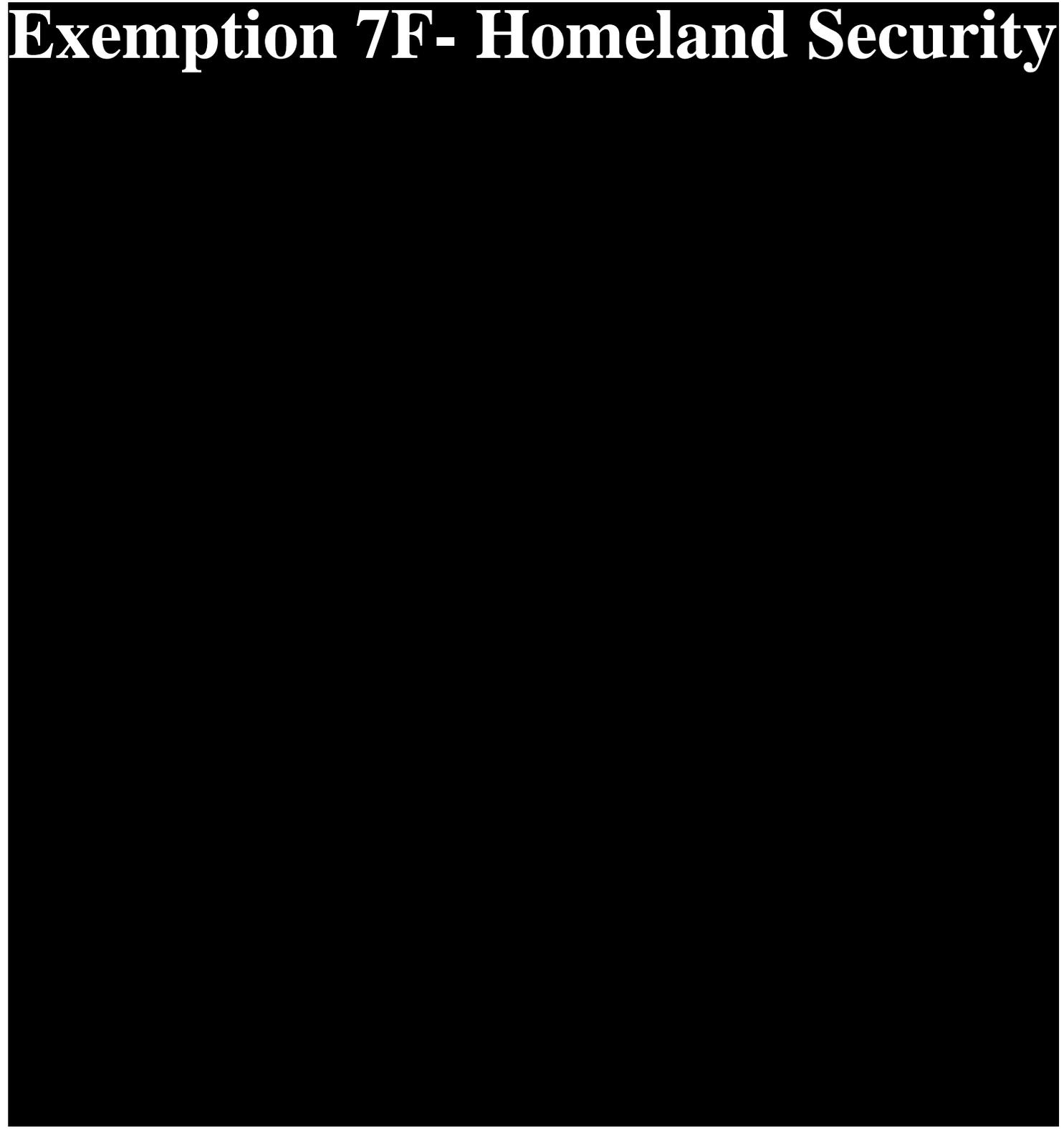
Exemption 7F- Homeland Security



Exemption 7F- Homeland Security



Exemption 7F- Homeland Security





Exemption 7F- Homeland Security

A State Line Tavern, 51962 E Taggart St, East Palestine, OH 44413

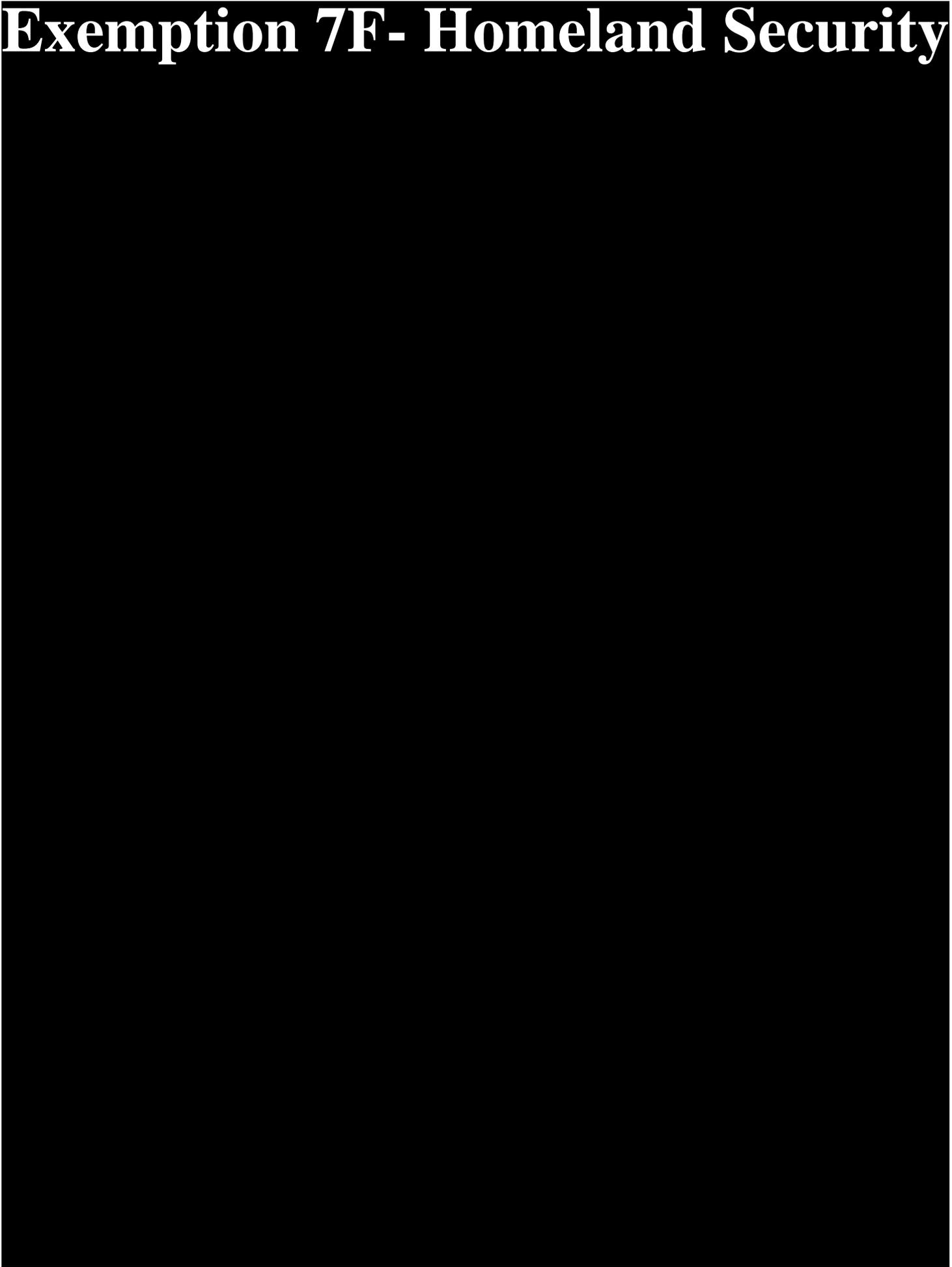
B Clean Harbors Inc, 2027 Independence Pkwy S, La Porte, TX 77571



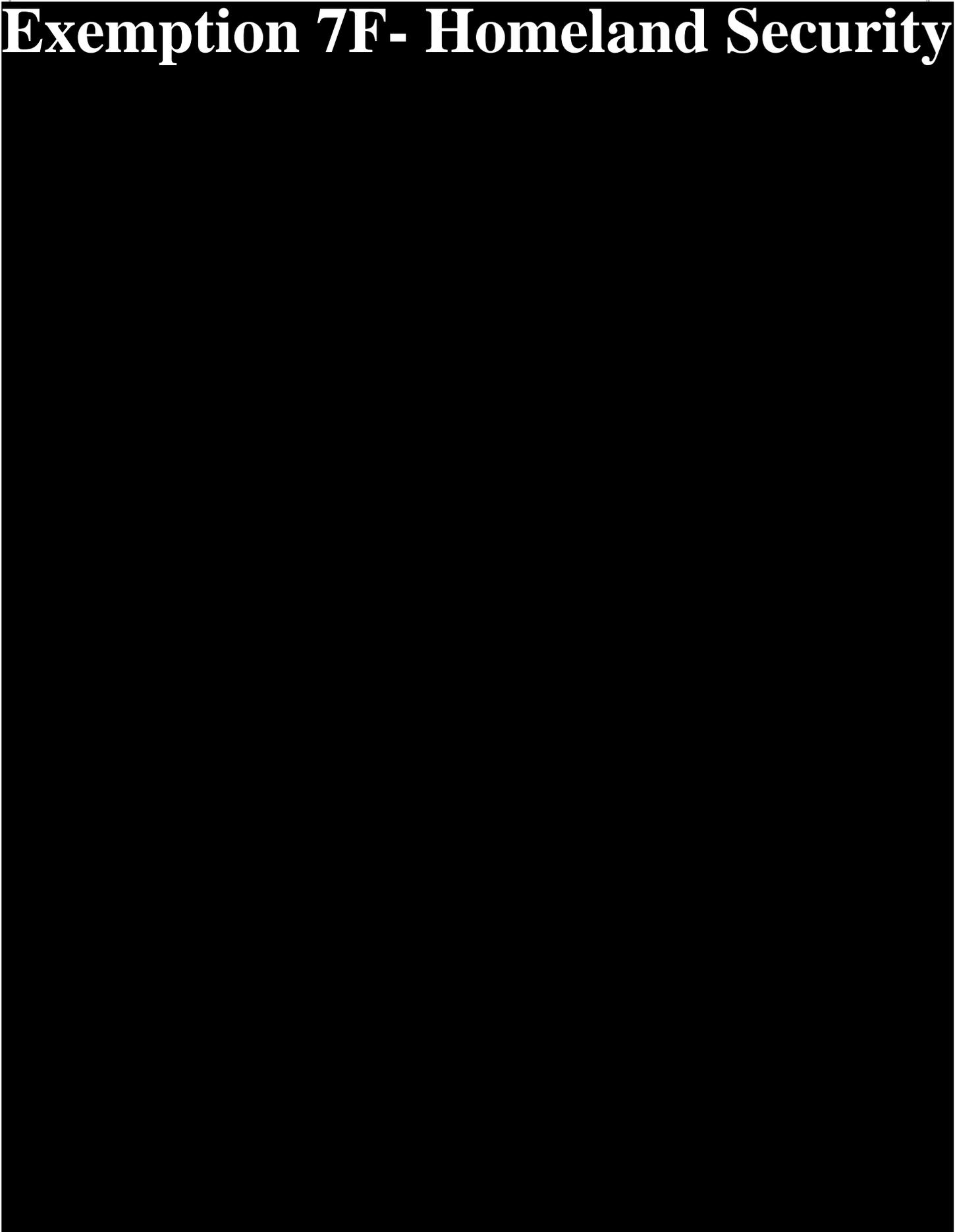
A State Line Tavern

Exemption 7F- Homeland Security

Exemption 7F- Homeland Security



Exemption 7F- Homeland Security



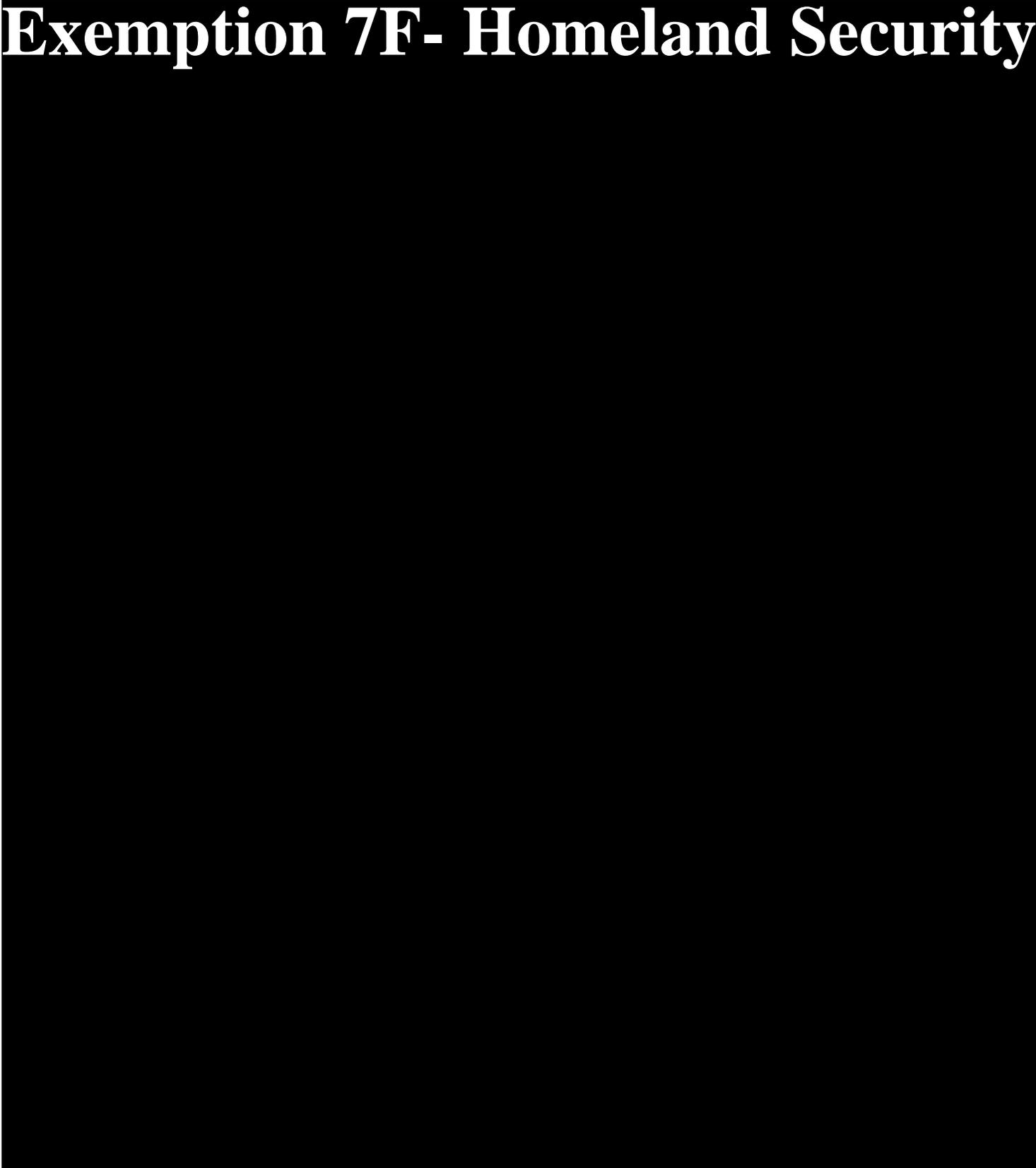
Exemption 7F- Homeland Security

Exemption 7F- Homeland Security



B Clean Harbors Inc

Exemption 7F- Homeland Security



These directions are subject to the Microsoft® Service Agreement and are for informational purposes only. No guarantee is made regarding their completeness or accuracy. Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2023 TomTom.